CHAPTER 1: ORIENTATION AND BACKGROUND

1.1 INTRODUCTION

As emphasised by Lewis and Bridger (2001:4), a new economic order has developed and is referred to as the New Economy, also called the information economy or digital economy. This new economic order has brought about a shift in the focus from manufactured goods and services to an economy that places emphasis on knowledge and the application thereof within a specific context (Leung, 2002). Furthermore, this economic order places emphasis on the increased saliency of information and how it can be applied as a commercial and competitive tool. Concurring, Barua *et al.* (1999) refer to the New Economy as the Internet Economy as they explain that while the physical aspects of any economy are still based on raw materials like steel, oil and gas, the Internet Economy is fundamentally different as it relies on high-speed networks and Internet applications, new marketing and business tools and electronic intermediaries which are all used to increase the efficiency of Internet-driven markets. Young (1998:174) agrees and highlights that the Internet is one of the most important Information and Communication Technologies (ICTs) that has played a role in the development of the New Economy. Moreover, Burlin (2003) explains that the Internet has become the strategic business weapon of the New Economy and has been applied to create an environment that is not bound by any geographical or time boundaries as this medium enables consumers to purchase any product at any time or in any place. Correspondingly, Keen and Mackintosh (2001:6) refer to the New Economy as the Freedom Economy as this economy rests on consumers having choices, information to make choices, confidence in making them, and removal of industry and competitive barriers to companies broadening their choices.

In view of the New Economy, Lewis and Bridger (2001:3) emphasise that the New Economy is characterised by the consumer that functions within this economy who are known for their unique approach to purchase decisions and involvement in the purchasing process. This consumer is referred to as the New Consumer (Lewis & Bridger, 2001:3) and as explained by Power *et al.* (2001:26) functions as an entity that is *always on* and can conduct business anywhere, any time and in any place. This individual is identified by certain characteristics such as being individualistic, involved, independent and informed, but also suffers from scarcities specifically with regard to time, attention and trust. The scarcity of time has meant that the New Consumer is driven by necessity and time is used for the individual's own convenience, which makes the relevance of services being easy and convenient very important in the new economic

order. Furthermore, due to the time constraints experienced by the New Consumer, technology is used to assist and survive in the New Economy. In view of the scarcity of attention, it is imperative for organisations that aim to provide value-added services in the New Economy, to place focus on relationship-driven activities, which means that offers are customised and personalised information about the consumer is collected. This is reiterated by Johansson (2000:532) who explains that the New Economy is structured on a one-to-one relationship that exists between the buyer and the seller, and the seller has the opportunity to offer customised products and services to the buyer at competitive rates. In addition, the last scarcity of the New Consumer being trust, refers to the fact that this consumer is typified as having a lack of trust towards established authority that has contributed to an increased cynicism towards brands which has culminated in an environment where it has become imperative for brands to deliver on value and meeting the expectations of personalised value in the New Economy. As emphasised by Keller and Lehmann (2003:27), brands need to prove themselves to a more sophisticated consumer when trying to add value in this new economic order and this is important as the value of brands ultimately resides with the consumer. In addition, the relevance of a value proposition in the New Economy needs to be highlighted as Buttle (2004:34) explains that it is no longer sufficient to provide the customer with Customer Relationship Marketing (CRM), but as Gilmore (2001:2) explains there needs to be a shift from CRM to unique and consistent customer experiences where brands should stage experiences based on the context in which the brand message is received. Nash and Shulby (2005:57) reiterate this sentiment and add that consumers in the New Economy should be approached using the customer ecology approach, which means that value of the customer franchise is maximised by managing prospects and customers as limited and precious resources as they are a finite resource.

In light of the value proposition that needs to be delivered to consumers in the New Economy, Quick Start Technologies (Anon., 2000b) explains that the Internet has fuelled a new economic order that places attention of the use of e-business within the business structure and this has brought about revolutionary effects. The Internet, which refers to a worldwide system of interlinked computer networks that function on a standard protocol and allows data to be transferred between otherwise incompatible machines (Duncan, 2002:417), has brought about a business structure that is able to provide value to customers while taking the competitive lead. This is due to the fact that the Internet as a business tool is, "…all about time cycle, speed, globalisation, enhanced productivity, reaching new customers and sharing knowledge across institutions for competitive advantage". Furthermore, the Internet has enabled electronic business (e-business) as a business tool, which is defined as the entire chain of business activities that use

the web as backbone (Mesenbourg, 2000:5), and this has brought about the creation of a new marketplace, which is now referred to as a market space due to the fact that the consumer can function as an *always on* ubiquitous entity that does not need to visit a physical store to purchase a product or service. The newly developed market space is also changing at a rapid pace and as highlighted by Keen and Mackintosh (2001:52), this is due to the fact that wireless technology that enables mobile business (m-business) is developing faster than wired technology that enables e-business.

In light of the significant changes brought about by wireless technology, Ding and Unnithan (2005:57) as well as Anon. (2005h) state that a revolutionary technological breakthrough is currently taking place in the New Economy as wireless communication is changing the way in which the New Consumer works and conducts business. According to Nossel, Manager of Intel SA (quoted in Anon., 2002r), combining wireless technology and the Internet gives people a flexible, mobile way to communicate, work, educate and live. Furthermore, Ding and Unnithan (2005:57) highlights that the wireless revolution places emphasis on mobile devices which form a critical component of the life of the New Consumer functioning in the New Economy. Furthermore, wireless communication enables organisations to adopt new business models which entail mobile business (m-business) solutions and offers the advantage of delivering just the right information, to just the right people at just the right time where m-business refers to the purchasing of information, goods and services via a mobile device (Anon., 2000c). In addition, m-business also allows the organisation to offer convenient, personalised and location-based services to customers, employees and partners when these individuals utilise wireless communication. This also means that m-business allows for a multi-communication channel approach by the New Consumer when communicating or conducting business as this individual is referred to as a device-agnostic entity. Moreover, Stone *et al.* (2001:6) emphasise that the New Consumer has adopted a multi-channel approach to deal with time pressures and other issues in the New Economy.

The mobile device, which is crucial to the process of m-business, has shown a significant rate of adoption in the last few years. As indicated by Wallace (2006), thirty countries worldwide exceeded the 100% penetration mark by the end of the first quarter of 2006. The mobile device is increasingly being used to access the Internet and an indication of significant growth, specifically with regards to this activity, shows that the amount of users amounted to over two billion users during July 2006. In light of the use of mobile devices, it is important to reiterate that consumers accessing the wireless Internet are utilising this service via a mobile handheld

device and not necessarily a mobile phone. The term mobile device extends beyond the mobile phone and refers to a small lightweight device that is used for voice and data communication. This device serves as a terminal for any wireless communication and transaction as it can connect to the Internet and communicate with any service provider in the marketplace through a common communication interface, namely Wireless Application Protocol (WAP) (Junglas, 2002:9).

In view of m-business, the mobile device enables a number of m-business categories such as mobile commerce, mobile information services, mobile services such as repair and emergency services, mobile communications, mobile entertainment and also the mobile office (Anon., 2000c). As highlighted by Raina and Harsh (2002:47), all these different m-business categories, as identified by Siemens (Anon., 2000c), function to offer value propositions to the New Consumer functioning in the New Economy. One of the m-business categories that functions as a value proposition is m-commerce, as this m-business application enables consumers and businesses to break away from traditional methods of doing business, and transactions can now be processed from anywhere and at any time. As such, m-commerce is defined as wireless digital communication tools within a business structure, which includes any value-added transaction or service carried out over a wireless network (Stone *et al*., 2001:1). M-commerce combines the advantages of mobile communications with the existing e-commerce services as it allows the consumer to function as an entity that is *always on* anywhere and at any time, which turns this individual into an ubiquitous entity. Furthermore, the consumer utilising m-commerce becomes reachable 24 hours of the day for seven days of the week (Müller-Veerse, 2002:8). Furthermore, one of the most important advantages of m-commerce is the fact that it ensures convenience which is seen as value by the New Consumer. As reiterated by Anon. (2001l) the relevance of customer value proposition in the offering of mobile communication services is important when driving sustainable value from mobile services. Furthermore, the convenience factor is enhanced by the advantages that m-commerce offers, such as location-sensitive information and personalisation. Location-sensitive information, also referred to as l-commerce (Gupta, 2001b), enables the identification of the mobile user in a mobile network and turns the individual into a functional entity immaterial of time or place. This has created a tool that allows for the delivery of local information to the consumer when it is required. It has also enabled the ability to pinpoint a person's geographic position and as emphasised by Jukic *et al*. (2001) this allows for goods and services to always be available to the consumer at a fixed and convenient distance. In addition, another advantage that m-commerce offers is the personalisation of services delivered and the relevance of this advantage is reiterated by Stone *et al*. (2001:6) who state that the value

in wireless data lies in knowing the customer and utilising this knowledge to create revenue streams. Moreover, this enables the organisation the opportunity to offer the consumer a unique service based on the needs, location and customised to the specific device used to access the information. This highlights the statement of Glick (2006) that states that consumers and business priorities are coming together in mobile technology and has led to access to information and communication at any time and anywhere which has also become a selling point and necessity for organisations in the New Economy. These value-added services are offered as a value proposition with the assistance of various partners that contribute to the delivery of an m-commerce service.

In view of the creation of value-added m-business services, Müller-Veerse (2002:15) has developed an m-commerce value chain that depicts the number of partnerships that contribute to the creation of value. A partnership refers to the process where a customer firm and supplier firm form strong and extensive social, economic, service and technical ties over time with the intent of lowering total cost and/or increasing value, thereby achieving mutual benefit (Andersen & Narus, 1991:2). The partners in the m-commerce value chain include parties such as handset vendors, mobile service providers, technology platform vendors and other contributing parties. As emphasised by Datta *et al*. (2001:78), it is important for organisations offering m-commerce to create these partnerships with other parties as this will bring together complementary assets and capabilities. In addition, Shi (2004:18) states that in order for mobile business to continue to grow, technical issues such as device limitations, usability, standardisation and the integration of different wireless technologies need to be addressed.

One industry that has adopted m-commerce and the advantages that it offers its consumers is the banking industry and this has been done with the introduction of mobile banking (m-banking). M-banking is a subset of online banking and refers to various technologies that offer the New Consumer banking that is available at any time, anywhere and from *always on* mobile devices such as mobile phones and personal digital assistants (PDAs). M-banking enables consumers to access their accounts, pay bills, make transfers and receive reminders or payment advice using a mobile device which means that m-banking offers all the advantages that Internet banking offers hence many banks offering only Internet banking see wireless as the step in the mobile financial service evolutionary process. M-banking started in 1992 in Scandinavia with MeritaNordbanken and the adoption of m-banking grew significantly where 94% of all banks in Europe were offering the service in 1999 (Müller-Veerse, 2002:40). As highlighted by Ghani (2001), mobile banking is revolutionising the financial industry and as emphasised by the Thought Leadership

Forum (Anon., 2001i:1), financial services have been early adopters of m-commerce due to the time and location sensitivity of mobile devices and networks and the value that it creates. Furthermore, BitFlash Incorporated (Anon., 2001i:1) emphasise that financial institutions are notorious early adopters of new technology and the reason may be due to the fact that these users understand the return on investment.

Similar to the growth that m-banking is experiencing globally, this m-commerce application is also showing phenomenal growth in South Africa. By 2004, a total of 10% of the total online banking user base was already using mobile banking offered by banks in South Africa (Anon., 2004e:157). A contributing factor to the growth of m-banking in South Africa is the fact that it can be delivered on both a prepaid and post-paid system and as 90% of all mobile device connections in 2006 were prepaid (Anon., 2005j), this service is available to the majority of mobile communication consumers in the country. Consequently, Henderson and Harrison (s.a.) emphasise that the New Economy has created a scenario where consumer relationships exist only with the mobile device as infomediary, as these devices are easily accessible. This has culminated into an environment where the elements of trust together with secure technology have become very important. With reference to the latter statement, the business offering of m-banking has to take technical issues, technology limitations, device limitations and issues pertaining to the implementation of m-banking into consideration. In light of the identification of these issues, it is of significant importance that the industry requirements of mobile financial services namely customer proposition, business priorities, technical issues and implementation issues are identified, as this provides advice and information to the financial industry on how it can start offering mobile services such as m-banking to consumers. In this regard, a Nexus database search on all research conducted on this specific topic was conducted and it showed that it has not been fully investigated from an academic research approach. However, this subject has been more extensively investigated by a number of researchers on the international front, but only from a consumer behaviour perspective and not from an industry requirement perspective. The research conducted was thus exploratory in nature as this approach was useful in the investigation of the industry requirements and the implementation thereof in m-banking.

1.2 RESEARCH PROBLEM

It is important to take cognisance of the fact that for mobile financial solution adoption to increase, banks need to emphasise the value that is added through the use of such a mobile financial solution. For example, m-banking, as an m-business application, is one tool that allows

for the offering of a customer value proposition due to the ubiquity, convenience, localisation and personalisation that are offered. Moreover, m-banking enables simple financial transactions to be conducted by the consumer irrelevant of time or location. Issues that pertain to the implementation of m-banking, as a value-added m-business offering, need therefore to be addressed by organisations as the delivery of this mobile financial solution depends on a number of partnerships that exist between the relevant bank and a number of other parties (Kumar & Zahn, 2002; Woolfall, 2003). Furthermore, the delivery of mobile financial services and specifically m-banking, as a value-added m-business offering, is dependent on the implementation of the industry requirements of mobile financial services.

Taking this into consideration, the specific research problem to be addressed is as follows:

How does Absa's Delivery Channel Services Department implement the industry requirements of mobile banking as a value-added mobile business offering?

1.3 RESEARCH QUESTIONS

The specific research questions to be addressed are as follows:

1. How does Absa's Delivery Channel Services Department implement customer proposition as a value-added m-business offering?
2. How does Absa's Delivery Channel Services Department implement business priorities as a value-added m-business offering?
3. How does Absa's Delivery Channel Services Department implement technical issues as a value-added m-business offering?
4. How does Absa's Delivery Channel Services Department implement implementation issues as a value-added m-business offering?

1.4 RESEARCH AIMS

The specific research aims to be addressed are as follows:

1. To determine how Absa's Delivery Channel Services Department implements customer proposition as a value-added m-business offering.

2. To determine how Absa's Delivery Channel Services Department implements business priorities as a value-added m-business offering.
3. To determine how Absa's Delivery Channel Services Department implements technical issues as a value-added m-business offering.
4. To determine how Absa's Delivery Channel Services Department implements implementation issues as a value-added m-business offering.

1.5 THEORETICAL STATEMENTS

The following are theoretical statements and provide theoretical grounding for the research questions and aims:

1. The relevance of customer proposition is emphasised by Anon. (2001l) who states that to drive sustainable value from mobile financial services, there are three important factors to consider: customer, customer and customer.
2. As explained by Glick (2006), consumers and business priorities are coming together in mobile technology, which has led to access to information and communication at any time and anywhere becoming a selling point and a necessity for companies.
3. Shi (2004:18) highlights the relevance of technical issues in the following statement: "In order for mobile business to continue to grow, technical issues such as device limitations, usability, standardisation and integration of different wireless technologies must be addressed."
4. As stated in the MeT White Paper on mobile transactions (Anon., 2003l:12), ease-of-use directly affects the consumer adoption of the security solution whereas the costs associated with the solution form a critical component in the business case for the implementation of mobile banking.

1.6 METHODOLOGY

In view of the preceding discussions pertaining to the problem statement, research questions, research aims and the theoretical statements, the following section is a review of the various stages of the research methodology implemented. As such, the following extrapolations address the literature reviewed, the methodological orientation used, the population and sample chosen, the research design implemented, as well as the data collection and analysis techniques applied.

Furthermore, an overview of both validity and reliability will take place and how they were obtained, based on the chosen research methodology and research design.

1.6.1 Literature review

Gobé (2001:xii) theorises that the economy that currently exists, is a hypercompetitive marketplace. Subsequently, Kunde (2002) and Keller and Lehmann (2003) posit that organisations functioning in this new economic order need to embrace a new approach to value creation and explain that the focus of the New Economy is from value from product to value from experience. This sentiment is supported by Glover (2004:87) who states that the role of the brand in the New Economy is not based on the ultimate financial gain but on how the brand enhances the complete consumer experience. The New Consumer has multiple points of exchange with products and services and the relevance of meeting the consumer's expectations of value has become important. In light of the value delivered, Pine and Gilmore (1999:2) and Anon. (2002g) extrapolate that it is crucial that the brand stages an experience. Consequently, Prahalad and Ramaswamy (2004:3) state that the fundamental challenges for businesses lie in shifting the view of the consumer, as a passive target market, to understand that consumers are actively involved. Hence staging a brand experience has become a very important strategy for establishing and maintaining customer preference for an institution in the New Economy.

Subsequently, Clarke (2001:145) emphasises that for m-business to reach its full potential in this new economic order driven by value, organisations must offer the maximum effectiveness and value by leveraging the unmatched advantages of wireless technology. The offering of value propositions needs to focus on the following four constructs:

1. Customer proposition

   The New Economy has placed emphasis on the delivery of customer proposition when delivering products and services to the New Consumer functioning in this new economic order, and it has now become imperative to create value and an experience around these offerings. As highlighted by Mruz (2000:1), the New Economy has brought about a new set of economics in which intangible assets such as information and knowledge contribute as much as or more than tangible assets to value creation. In light of this statement, Prahalad and Ramaswamy (2004:4) as well as Kunde (2002) explain that organisations functioning in the New Economy need to focus on the intangible assets and embrace a new approach to value creation that places emphasis on the development of a relationship that offers customised and personalised information. This is due to the fact that the New Consumer,

functioning in the New Economy, suffers from scarcities such as time, attention and trust, and a relationship delivering on customised and personalised information meets the consumers' expectations of personalised value.

In light of the delivery of personalised value, Keller and Lehmann (2003:27) emphasise that brands need to prove themselves to a more sophisticated consumer when trying to add value in the New Economy and this calls for a new approach to value creation. This postulation is supported by Kunde (2002), Glover (2004) and Prahalad and Ramaswamy (2004:4) who also emphasise that this approach needs to focus on the shift in value from product to experience. As highlighted by Buttle (2004:34), it is no longer sufficient to provide Customer Relationship Management (CRM), which is defined as the core business strategy that integrates internal processes and functions, and external networks, to create and deliver value to targeted consumers at a profit. Schmitt has developed a new approach with regard to relationship management and the development and management of this phenomenon is called Customer Experience Management (CEM), which Schmitt (quoted by Kiska, 2002:28) defines, "as the process of strategically managing a customer's entire experience with a product or company". In business, CEM refers to a management practice aimed at driving growth, increasing revenue, and spurring organisational change by ensuring that customer experiences meet their expectations.

In light of a customer value proposition based on value and the offering of an experience, Athey (2001) adds that the m-business solution enables organisations functioning in the New Economy to unlock the real value of wireless communication by delivering just the right information, to just the right people at just the right time. In view of this statement, Arthur Andersen Consulting (Stone *et al*., 2001:6) highlights that the, "value in wireless data lies in knowing the customer and utilising this knowledge to create revenue streams" and this can be done by tailoring mobile service offerings to a specific end-user's requirements due to the scarcities that this individual experience such as time, attention and trust. This offers a customer proposition based on value as real time information is accessible by the consumer irrelevant of the time zone within which the person functions or the place that the person is at. The information offered to the user must be localised and satisfy the requirements of highly time-critical transactions. Furthermore, the value is once again highlighted by Siemens (Anon., 2000c) who state that m-business users expect applications that are easy to use and offer a high level of personalisation.

In view of the importance of a value proposition, Kumar and Zahn (2002) explain that partnerships are essential. Woolfall (2003) supports this sentiment and adds that m-business emphasises the need for partnering and Andersen and Narus (1991:2) describe partnering as, "a process where a customer firm and supplier firm form strong and extensive social, economic, service and technical ties over time, with the intent of lowering total costs and/or increasing value, thereby achieving mutual benefit". In support of the latter statement, Müller-Veerse (2002:15) has developed an m-commerce value chain that illustrates how a number of partnerships contribute to the creation of value. Moreover, Datta *et al.* (2001:78) state that it is important for organisations functioning within mobile business structures to create partnerships with other parties as this will bring together complimentary assets and capabilities.

2. Business priorities

   According to Botha (2001), m-business, utilised as a value-added offering, offers the organisation functioning in the New Economy many advantages as communication and business priorities are coming together in the New Economy. Glick (2006) agrees that consumers and business priorities are coming together in mobile technology, which has led to access to information and communication at any time and anywhere becoming a selling point and a necessity for organisations. Consequently, organisations are ensuring that these priorities are specifically coming together in mobile technology where it is used to offer access to information, communication and functionality to the New Consumer any time and anywhere (Botha, 2001). Ayadi (s.a.) concurs and emphasises that organisations should utilise the m-business opportunities due to the advantages that this business tool adds to the business structure and it should not only be treated as an extension to the traditional web, as this could result in missing out on unique differentiated qualities for value-added possibilities. In light hereof, Barnes (2002:91), supported by Goodman (quoted by Barnes, 2002:91), explains that the convergence of Internet and wireless communication is an issue of the past and many organisations are currently announcing plans for m-commerce enhancements to the business structure as these organisations have realised the value of the m-business tool. Furthermore, Raina and Harsh (2002:4) posit that the organisation integrating m-business solutions into the business structure offer the New Consumer freedom to make the choices. This is also highlighted by Keen and Mackintosh (quoted by Mahatanankoon *et al*., 2004:2) who concur and emphasise that the key value proposition of mobility is the creation of choice, or new freedoms, for consumers.

In addition to the choices offered to New Consumers, Karvonen and Warsta (2004:171) add that mobile technology and mobility opens up many opportunities for organisations to offer services that make the lives of the New Consumers easier. In support of the latter statement, Stolz (2001:1) states that m-commerce offers the possibility of an entire new level of financial flexibility, taking advantage of recent social and technological developments. Clarke (2001:145) reiterates this sentiment and adds that for m-commerce to reach its full potential of information available, any time, anyplace and on any device, organisations must offer the maximum effectiveness and value through leveraging the unmatched advantages of wireless technology. According to Kumar and Zahn (2002), the advantages that is offered by wireless technology and specifically m-business can be enhanced by the creation partnerships. Furthermore, Woolfall (2003) states that m-business emphasises the need for partnering. With regards to partnerships, McKinsey (Datta *et al*., 2001:79) emphasise that the best partnership strategy that organisations can engage in is an open system as it allows for open market competition and businesses to grow larger and faster and, "by going open for the beginning, the company could capture market share that would otherwise be at risk from the closed strategy of a more effective competitor. According to Woolfall (2003) unwillingness of partnerships may exist in larger organisations due to fear of information leakage or a lack of courage from smaller organisations to co-operate with each other. As highlighted by Kreyer *et al.* (2002), the integration of partners leads to complex and difficult negotiations. Woolfall (2003) further adds that it could be advantageous for organisations to adopt multiple partnerships as long as these are value-adding relationships.

3. Technical issues

   Shi (2004:18) emphasises that in order for m-business to grow, technical issues such as security, usability standardisation and device limitations must be addressed, as these factors could influence consumer adoption. Moreover, due to the trust issue that the New Consumer experiences in the New Economy, ICTs and security issues around technology have also become imperative. Correspondingly, Raschke and Kelly (2002:2) add that security is no longer a value-added feature, but a core requirement for conducting business and with the advent of the Internet and increasing mobility, security is becoming even more of a priority for organisations functioning in the New Economy.

   Power *et al*. (2001:10) state that the public perception is that the Internet, as an ICT, is insecure and this perception transcends to security in the mobile communication environment. In light hereof, Lightman and Rojas (2002:33) argue that digital mobile communication systems provide reliable, high-quality voice and data mobile transmissions

and it also has the security against eaves-dropping and cloning. In view of specifically m-business security as part of mobile communication, Keen and Mackintosh (2001:194) highlight that m-commerce is not secure and this is due to the basic characteristics of wireless as a communication medium and also the immaturity of wireless technology. Consequently, Lam *et al*. (2003:2055) postulates that lightweight security mechanisms are needed to protect m-commerce transactions and this is due to resource constraints of mobile computing platforms. In view of this statement, Anon. (2002i) emphasises that it is becoming more difficult to offer adequate security to end-users, using m-business solutions such as m-commerce, without compromising the ease-of-use and speed of the wireless device and this is with specific reference to the factors such as constrained bandwidth, low computing power, memory limitations, battery life and various network configurations. Due to security reasons many consumers have major concerns when conducting a high value transaction. However, security is one major factor that plays a role in the adoption of m-commerce and security mechanisms need to be well studied when deployed in mobile applications (Lam *et al*., 2003:2054).

In view of offering security as part of a value-added offering of m-business, Lam *et al*. (2003:2054) show how two standard protocols, namely Wireless Application Protocol (WAP) and Wireless Internet Gateway (WIG), are used to create secure transactions within m-business. WAP is a standard protocol that allows a mobile device to retrieve information from the Internet via a server installed on the mobile phone network (Anon., 2001l). WAP functions by means of a WAP Gateway and is a global standard for presentation and delivery of information over wireless devices (Anon., 2004h). The second protocol ensuring security is WIG which can be described as a tool that brings WAP to legacy terminals via SMS and supports end-to-end security, push and location-based services (Anon., 2005j). Furthermore, WIG is a menu-driven SIM card application and allows for easy navigation through the menu as WIG uses SMS as bearer it is ideal for allocations like Internet banking, secure transactions, payment solutions and applications used in the SMS environment.

4. Implementation issues

BitFlash Incorporated (Anon., 200ll:1) state that financial institutions are notorious early adopters of new technology and the reason may be due to the fact that these users understand the return on investment case for the implementation of mobile banking. In light of the latter statement, Ayadi (s.a.) emphasises that the key element for choosing the better moment of adoption and the opportunity to invest are to anticipate value proposition awaited by consumers. The opportunity to invest in m-business solutions or implement this value-added

business structure effectively, is of critical importance in the New Economy. This is due to the fact that the ease-of-use directly affects the consumer adoption of the security solution whereas the costs associated with the solution form a critical component in the business (Anon., 2003l:12).

1.6.2 Methodological orientation

Scientists use a variety of techniques and methods in empirical research which is referred to as a methodological paradigm. Babbie and Mouton (2004:49) use the term methodological paradigm to explain these methods and techniques used by the social researcher as well as the underlying principles and assumptions regarding their use. In view of methodological paradigms, Myers (2006) as well as de Vos (2004:79) argue that there are two methodological paradigms that can be used when conducting research namely quantitative and qualitative approaches.

Authors such as Seale (1999:21) explain that the quantitative research approach is a paradigm that is based on positivism with its main aims being to measure the social world objectively, to test the hypothesis, and to predict and control human behaviour. Furthermore, Myers (2006) explains that the quantitative research paradigm was originally developed in the natural sciences to study natural phenomena however quantitative research methods are currently well accepted in the social sciences. The quantitative research methods include survey methods, laboratory experiments and numerical methods such as mathematical modelling (Myers, 2006). Veneeva (2006) elaborates on the quantitative research approach and explains that these methods focus on understanding social phenomena and emphasise objective measurements as it entails numerical measurements. Veneeva (2006) continues to argue that the quantitative researchers, in comparison to researchers using the qualitative approach, are concerned with issues of design, measurement and sampling due to the deductive approach that is adopted in this research paradigm. Furthermore, Neuman (2003:152) mentions that quantitative research is an organised method for combining deductive logic with a precise empirical observation in order to discover and confirm a set of probalistic or casual laws that can be used to predict general patterns of human activity.

In comparison to the quantitative research approach, the qualitative research paradigm was developed in the social sciences to enable researchers to study social and cultural phenomena (Huberman & Miles quoted by Linacre (1995); Myers (2006); Taylor (2006)). The qualitative research paradigm is referred to as the interpretive approach to social science research and it is aimed at describing, making sense, interpreting and reconstructing the interaction in terms of the

meanings that the subjects attach to it. Furthermore, the findings or data generated from qualitative data analysis are words rather than numbers, which explain, describe and express new perspectives. Qualitative data is concerned with interpreting meaning and the spoken word rather than portraying conclusions in numerical data through the use of statistical methods. Furthermore, Taylor (2006) explains that the aim is to capture the multiplicity of perspectives of social actors, and the meanings that those actors assign to events. In addition, Myers (2006) elaborates on the methods used in the qualitative research approach and mentions that data collection include action research, case studies and ethnography while qualitative data sources are observation and participant observation (fieldwork), interviews and questionnaires, documents and texts and the researcher's impressions and reactions. Taylor (2006) adds that the motivation for doing qualitative research is due to the fact that these methods are designed to help researchers understand people and the social and cultural contexts within which they live. Kaplan and Maxwell (quoted by Myers, 2006) concur and emphasise that qualitative research methods offer the opportunity to understand the phenomenon from the point of view of the participants and its particular social and institutional context is lost when this information is quantified.

Based on the differences that exist between the quantitative and the qualitative research methodologies, a qualitative research methodology was chosen. The use of a qualitative research approach allowed for the use of inductive logic, which means that insight was gained into the patterns in the data of mobile banking, as a value-added m-business offering and this also allowed for an understanding of Absa Mobile Banking. Furthermore, this study was exploratory in nature as mobile banking, as a B2C m-business application in the retail sector of South Africa, has not been fully investigated from an academic research perspective.

1.6.3 Population and sampling

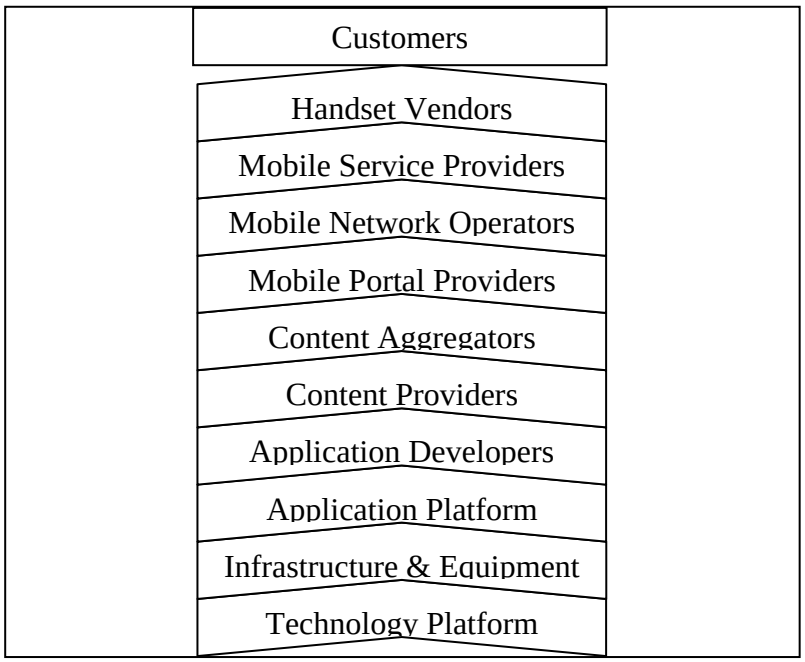
The population identified pertaining to the research will be the Delivery Channel Services Department of Absa. There are a number of reasons for the selection of Absa that include the following:

- Absa offers the largest retail network as a bank in South Africa with a total of 475 000 Internet banking customers and already seven million customers by March 2005 (Anon., 2004m).
- Absa has the largest Internet banking service in South Africa that serves 10% of its total retail customer base as it grew by 18,9% from April 2004 to April 2005 (Anon., 2005d).

- With reference to the research problem, it is of significant importance that Absa Mobile Banking has already been implemented in Absa due to the fact that the research deals with the implementation of the industry requirements of mobile banking.
- In addition, Absa offers mobile banking known as Absa Cellphone Banking and renders this streamlined, affordable and intuitive service via mobile phones that can be used to perform limited banking transactions at any time using the mobile device. This service was offered to 150 000 registered consumers by the end of February 2006. Absa Mobile Banking had already gained a 56% market share by the end of January 2005 although this is a very slow adoption rate when compared to other delivery channels such as the Internet (Anon., 2005d).

The implementation of Absa Mobile Banking depends on a number of partnerships that exist between Absa and other entities. The relevance of these different partners is highlighted by Elliot and Phillips (2004:33) who state that there are a number of entities in the wireless industry with different roles and responsibilities in the m-commerce system domain. This is supported by Smith (2000) who mentions that the carriers and the entity offering the m-commerce service with other parties involved need to work together as it is a concerted effort. Müller-Veerse (2002:15) agrees and explains that there are various relevant role players that contribute to the delivery of m-commerce, and illustrates this by means of an m-commerce value chain (see Figure 1.6.3) that highlights the various role players involved in the delivery of m-banking as an m-commerce application.

Figure 1.6.3: The mobile commerce value chain (Müller-Veerse, 2002:15)



The m-commerce value chain holistically refers to the three groups that were used for the research namely Absa's Delivery Channel Services Department, mobile network operators and mobile phone manufacturers and together these groups constitute every component of the value chain excluding the customer. The value chain involves the following partners:

- Handset vendors – refer to the various mobile phone manufacturers and the population of this group equals ten mobile phone manufacturers in South Africa. These include Nokia, Sony Ericsson, Motorola, Siemens, LG, Samsung, i-Mate (Leaf Wireless), Palm One, SAGEM and Blackberry (Goldstuck, 2005:65). Alcatel is another mobile phone manufacturer in South Africa but this brand focuses more on the development of infrastructure, applications and services to broadband users rather than the primary goal being a mobile phone manufacturer hence Alcatel is not included in the mobile phone manufacturer population.
- Mobile service providers – refer to the mobile network operators, of which there are three in South Africa, namely Vodacom, MTN and Cell C. This is due to the fact that the mobile network operators also function as mobile service providers in South Africa.
- Mobile Network Operators – refer specifically to the network operators.
- Mobile portal providers – refer to the various mobile network operators.
- Content Aggregators – in Absa Mobile Banking, the content aggregator is identified as Absa as this is the entity that repackages the data regarding Absa Mobile Banking for distribution to the mobile device.
- Content providers – Absa holds all personal and account details pertaining to the individual conducting Absa Mobile Banking and thus provides the content.
- Application developers – Absa is identified as the application developer as the bank has developed the software used to deliver Absa Mobile Banking.
- Application Platform Vendors – this category refers to Absa and the three South African mobile network operators as these entities both have middleware infrastructure such as WIG servers.
- Infrastructure and equipment vendors – this function is specifically fulfilled by the mobile phone manufacturers as they provide the basic mobile phone infrastructure such as WIG.
- Technology Platform Vendor – i.e. the various mobile phone manufacturers as these partners provide the basic operating systems for the mobile device, such as PalmOS.

Taking into consideration the m-commerce value chain of Müller-Veerse (2002:15), the total population consisted of 22 role players that are involved in the delivery of Absa Mobile Banking.

A non-probability sample was used as the research was exploratory in nature and purposive sampling was selected as the sample method. The reason for the selection of a purposive sampling method was due to the fact that purposive sampling focuses less on a sample's representativeness but rather on a small selection of specific cases that can clarify or deepen understanding. This was done with the goal of gaining in-depth information pertaining to Absa Mobile Banking and generating a deeper understanding of the mobile financial solution. Furthermore, a total of 19 respondents were selected, which means that 86,3% of the total population formed part of the sample. These 19 respondents were categorised as follows:

- Ten respondents were chosen from Absa's Delivery Channel Services Department due to the fact that they are responsible for Absa Mobile Banking.
- Two respondents were chosen from the mobile network operators.
- A total of seven respondents were selected from the various mobile phone manufacturers.

1.6.4 Research design

The research method consists of a one-shot case study which is defined by Myers (2006) as an exploration or in-depth analyses of a bounded system (bounded by time and/or place) or a single or multiple case, over a period of time. As highlighted by Miller and Salkind (2002:162), the case study approach to qualitative inquiry is focused less on discerning patterns of the subject that is being studied and more on an in-depth description of a process, programme, event or activity taking place such as the implementation requirements of mobile banking. Moreover, Wimmer and Dominick (1987:155) expand upon this description and add that case studies are performed when a researcher aims to understand or explain a phenomenon. Fouché and Delport (2004:275) concur and argue that the exploration and description of the case takes place through detailed in-depth data collection methods, involving multiple sources of information that are rich in context and these sources may include techniques such as interviews, documents, observations or archival records.

Furthermore, Fouché (2004:275) refers to the fact that there are three types of case studies: an intrinsic case study that is focused on obtaining a better understanding of the individual case; the instrumental case study that is used to gain a better understanding of a social issue and to elaborate on a theory and the collective case study where cases are chosen so that comparisons can be made between cases and concepts, and that theories can be extended and validated. With reference to the research design, it can be deduced that the research design will be in the form of a one-shot intrinsic exploratory case study as it offers the opportunity of gaining a deeper

understanding of how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. Furthermore, the one-shot exploratory case study also offered an intensive investigation into a single unit, namely Absa Mobile Banking.

1.6.5 Data collection

The data required for the one-shot case study of Absa Mobile Banking entailed the collection of data in two phases. These phases of research were conducted to gain a better understanding of the case study. The process of data collection is summarised in Table 1.6.4 as follows:

Table 1.6.5: The process of data collection

Data collection	**Company**
Phase 1	
Stage 1	10 in-depth face-to-face interviews with Absa's Delivery Channel Services Department. Respondents consisted of management, marketing and technical support staff members.
Stage 2	2 interviews with mobile network operators namely MTN and Cell C.
Stage 3	7 interviews with various mobile phone manufacturers such as SAGEM, LEAF Wireless, Siemens, PalmOne, Blackberry, Motorola and Samsung.
Phase 2	
Stage 1	Documentation study

The first phase of research consisted of in-depth face-to-face structured interviews and interview schedules used for these interviews was developed using the Mobey Forum White Paper (Anon., 2004p) as template and guideline. The main categories covered in the interview schedules were the four industry requirements of mobile banking, as stipulated in the Mobey Forum White Paper namely customer proposition, business priorities, technical issues and implementation issues (Anon., 2004p). The second phase of the research consisted of documentation study with the primary focus being to offer clarity on certain concepts related to how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. Moreover, this method served to confirm and elaborate on the findings found in the various interviews conducted with Absa staff members, network operators and the various mobile phone manufacturers.

In light of the data collection process, it is relevant to emphasise the appropriateness of the utilisation of the Mobey Forum White Paper (Anon., 2004p). Mobey Forum, which is the developer of the Mobey Forum White Paper (Anon., 2004p), is a think tank of leading financial institutions and actors of the telecommunication industry joined by operators and consultants. Mobey Forum Mobile Financial Services Ltd released extensive documentation called the Preferred Payment Architecture 1.0 in 2001 and the financial industry's consolidated requirements on mobile financial services were stated in this document for the first time. In addition, the Mobey Forum White Paper on Mobile Financial Services (v.1.1) (Anon., 2004p) was released in September 2004 and constitutes a white paper on the principal requirements, also referred to as industry requirements for mobile financial services. Moreover, the Mobey Forum White Paper (Anon., 2004p) also offered a framework and structure for the structured in-depth interviews as it assisted with the formulation of questions posed during the interviews.

Furthermore, the industry requirements identified by the Mobey Forum White Paper (Anon., 2004p) are divided into four principal categories, and these four principal categories form the core components of the research questions and the corresponding research aims. The four industry requirements of mobile banking are identified as follows, and each entails a number of sub-categories (Anon., 2004p):

1. Customer proposition

   The industry requirement pertaining to customer proposition focuses specifically on the fact that the user experience with mobile financial services should be convenient and entail services that are easy-to-use, fast-to-use and offer value for money. This includes offering the consumer the freedom to choose a bank, operator and handset when using mobile financial services. In light hereof, mobile financial services should have wide acceptance and usability meaning that the solution should support multiple payment products that can be used in a wide variety of locations as this should promote customer habit. Moreover, technical and perceived security levels should be high as the customer has to be protected against fraud and hijacking attempts in payments.
2. Business priorities

   The industry requirement pertaining to business priorities emphasises that the service proposition has to offer value to all the relevant parties. Banks, telecommunication operators, handset suppliers, merchants and consumers all have to benefit from the solution that is chosen. In view hereof, business processes of different players have to remain independent of each other as it is not feasible for a bank to limit the service to its customers having a certain

mobile phone service provider. The solution has to scale across all financial service opportunities and banks should authenticate their customers themselves while providing banking and payment services. Finally, the bank should take advantage of the branding opportunity that is available within mobile environments and the solution must allow for the visible branding of payment products to be managed.

3. Technical issues

   The industry requirements pertaining to technical issues stipulate that open, non-propriety and existing technologies and solutions have to be used. The handset and servers should work seamlessly together through standard interfaces between different manufacturers, and all service providers should be able to enter markets smoothly. These technological solutions have to enable independence between banks, operators and mobile phones and the banking relationship, operator relationship and type of handset should be independent of each other. In light hereof, it is also important that end-to-end security (message integrity and confidentiality), secure authentication, and non-repudiation have to be guaranteed.

4. Implementation issues

   The industry requirements dealing with implementation issues stipulate that the costs to banks, merchants and consumers have to be relatively low. In addition to the cost element, time-to-market is of critical importance and the most important time-to-market factor is availability of existing solutions, such as suitable handsets, security applications and infrastructures.

In view of the interviews that took place, four different interview schedules were developed using the Mobey Forum White Paper (Anon., 2004p) as a framework and structure for in-depth face-to-face interviews and it also assisted in the formulation and development of questions contained in the various interview schedules. The four interview schedules were as follows:

- The first interview schedule was developed for the respondents from the Absa Delivery Channel Services Department that are responsible for the delivery of Absa Mobile Banking.
- The second interview schedule was developed for the Absa Delivery Channel Services Department employees involved with technological development and support with regard to Absa Mobile Banking.
- The third interview schedule was developed and used as a framework for interviews held with the representatives from mobile network operators.
- The final interview schedule was developed and used for the interviews that were conducted with the representatives of mobile phone manufacturers.

Furthermore, a dictaphone was used during the interviews, with the permission of the respondents, as this simplified the process of transcribing the interviews. The recording of the interview offered a complete record of data and ensured that no data was lost.

In addition to the first phase of the research, the second phase of data collection entailed a documentation study. The articles selected for this phase of the research was collected from the Internet and the material supplied by Absa and amounted to 14 articles dealing with Absa Mobile Banking.

In addition, a pilot study was conducted before any interviews were scheduled and it was found that the questions in the interview schedule did not need modification. What was of significance during the pilot study was the fact that Mobey Forum and the relevance of this body were highlighted in the pilot interview by the respondent.

1.6.6 Data analysis

As explained by Linacre (1995), data analysis is a process of fitting data together, making the invisible obvious, and linking and attributing consequences. Robson (2002:473) articulates that the use of the Huberman and Miles approach is particularly useful in case studies and consists of three major phases, namely data reduction, data display and conclusion drawing and verification, and these phases were applied in the following manner (Anon., 2006i):

- The process of data analysis entailed a step of data reduction which took place at the start of the study when all the relevant collected data on the topic of mobile banking and Absa Mobile Banking was reduced and research questions were formulated, the case study method was selected and data collection instruments were chosen. Furthermore, data reduction took place again after the data collection had occurred and patterns and themes were identified that emerged from the interviews and documentation study.
- The second step in the Huberman and Miles approach to data analysis entailed data display and consisted of an analysis of transcriptions of the various interviews that were conducted. Any similarities, differences and odds were then highlighted within the interviews conducted. Furthermore, similarities, differences and odds were identified during the documentation study and these were compared to the analysis of the analysis of the interviews.
- The final step of the Huberman and Miles approach entailed conclusion drawing and verification and this consisted of a process where interpretations and meanings were drawn

from the displayed data. The verification of the data was done by means of a pilot study as well as a multi-research method case study. Furthermore, the verification process entailed the benchmarking of theory with the research problem and thereafter verifying the correlation between the different research aims and theoretical statements pertaining to the specific research aim.

1.6.7 Reliability and validity

As explained by Babbie and Mouton (2004:119), reliability refers to the accuracy or precision of a measuring instrument. Furthermore, Mouton (1996:144) concurs and defines reliability as the requirement that the application of a valid measuring instrument to different groups under different sets of circumstances should lead to the same observation. Within the one-shot exploratory case study, reliability was obtained through the use of the Mobey Forum White Paper (Anon., 2004p). Furthermore, the Mobey Forum White Paper (Anon., 2004p) ensured that consistency was generated throughout all three stages of interviews conducted. In addition, the conduction of the pilot study ensured that the reliability of the research was strengthened. With regard to the documentation study phase of the one-shot case study, research conducted by Strydom and Delport (2002:324) highlights that the reliability with regard to the documentation study is relevant and this is created by referring back to the source of the document and correlating the data with findings from the interviews.

In addition, Mouton (1996:108) defines validity as an indication of accuracy in terms of the extent to which a research conclusion corresponds with reality. It is imperative to indicate that validity was attained due to the fact that methodological triangulation was developed as multiple data collection methods such as the structured in-depth face-to-face interviews and the documentation study were used.

1.7 CONCLUSION

The New Economy has brought about a new environment that allows for mobile financial services to be delivered to the New Consumer as a value-added m-business offering. One of these m-business applications namely m-banking is showing significant growth. The implementation of m-banking as a value-added m-business offering, specifically within Absa Mobile Banking, rests on industry requirements such as customer proposition, business priorities, technical issues and implementation issues. It is important to note that this industry is developing at a rapid pace and the investigation pertaining to Absa Mobile Banking specifically

focuses on Absa Mobile Banking during 2005. The value-added mobile financial solution offered by Absa was initially launched as an extension of Absa Internet banking but has now transpired into a value-added stand-alone service that is currently offered by the bank. Furthermore, another issue that can be identified as a limitation of the study is the fact that the customer has not been integrated into the research.

A number of chapters assisted in the investigation of the research problem:

- Chapter Two elaborates on the concept of the New Economy as a new economic order and how it has been brought about by the impact of ICTs. In addition, a review was done to show the development of the New Consumer functioning within the new economic order and important characteristics that show how this individual functions. This offered a link back to the theoretical discussion of the relevance of the customer value proposition in the New Economy and how convenience is a key factor to consumers in this economy. Moreover, the significance of value was emphasised and it was illustrated how partnerships should be created to maximize the value offered to consumers.
- In addition, the third chapter focuses on e-business as a business tool, enabled by the Internet, and how it is utilised as a value-added business offering in the New Economy. With regards to the research question pertaining to how Absa's Delivery Channel Services Department implements customer proposition as a value-added m-business offering, a link can be made back to the theoretical discussion which illustrates how e-business is aimed at creating convenience for the New Consumer in the New Economy. Furthermore, the literature can be related back to the issue of security which is highlighted as an industry requirement as the architecture of e-business is elaborated upon. Moreover, the illustration of adoption rates is significant as it shows that the e-business is widely accepted and consumer habit, and the development of creating a habit of usage, is taken into consideration by many organisations offering an e-business/e-commerce service.
- Furthermore, the fourth chapter focuses on mobile business in the New Economy and provides a discussion on the wireless revolution that is taking place in the New Economy. M-business is addressed as a product of the significant growth within wireless technology and has made the mobile device an important device in the consumer's life. A discussion on the definition of m-business shows that this concept entails many parties that function in an m-business ecosystem and how they contribute value to the mobile solution offered. Here a link can be made back to the theoretical discussions pertaining to the customer value proposition that is integrated into m-business. Security issues as well as m-business enabling

technologies are also significant as it relates to the research question dealing with how Absa's Delivery Channel Services Department implements technical issues as a value-added m-business offering. Moreover, the theoretical discussion pertaining to partnerships within m-business is also relevant to the research question, as it is established that industry requirements necessitates partnerships in the delivery of mobile financial solutions but it is crucial that these partners should be able to function as individual entities.

- Chapter Five explains mobile commerce as a mobile business offering and explains how this m-business application functions as a value-added m-business offering in the New Economy. This is followed by illustrating the state of m-commerce around the globe as well as locally in South Africa. An important component namely security is discussed against the background of the architecture that is needed to enable m-business. Furthermore, the m-commerce value chain (Müller-Veerse, 2002:15) is introduced and the various role players and/or partners responsible for the delivery of m-commerce are identified. With regards to the research question, a link can be made back to the theoretical discussions pertaining to the value of m-commerce and specifically m-banking as a financial m-business solution. Furthermore, emphasis should be placed on the theoretical discussion of the m-commerce value chain (Müller-Veerse, 2002:15) as it illustrates the relevance of partnerships within m-commerce and also identifies the relevant parties in the process. Moreover, the discussion pertaining to m-commerce architecture and the specific technologies that ensure security in m-commerce transactions is significant as it links back to the industry requirement of security and the fact that end-to-end security, authentication and non-repudiation of a mobile financial solution should be guaranteed. Finally, implementation issues such as time-to-market is addressed as the state of m-commerce and m-banking is illustrated against the background of the readiness of these applications in the global as well as South African market.
- Chapter Six follows and discusses the research design, research methodology as well as an explanation of the data collection and processing of the research data. The discussion illustrates the research methods used to determine how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added mobile business offering. Essentially these chapters culminated into the investigation of how Absa's Delivery Channel Services Department implements Absa Mobile Banking as a value-added m-business offering.
- Chapter Seven presents the findings of the Absa Mobile Banking case study and offers an interpretation and makes recommendations in this regard.

CHAPTER 2: THE NEW ECONOMY AS A NEW ECONOMIC ORDER

2.1 INTRODUCTION

As stated by Welfens (2002:8), there is a new economic order that has changed the way in which businesses and individuals function. Turner (2000:1) highlights the same issue and explains that this new economic order is called the information economy, also referred to as the New Economy, and is based on the increased salience of information and how it can be applied as a commercial and competitive tool. In view of this, Negroponte (quoted by Turner, 2000:1) adds that this economic order has shifted the focus from wealth creation, from the creation of atoms, i.e. manufactured goods towards the creation of goods, and services based on digital bits. The New Economy places emphasis on knowledge and the application thereof in a specific context. Leung (2002) and Welfens (2002:19) emphasise that computers and communication networks are the two components that have contributed significantly to the growth of the New Economy, and these authors explain that it is relevant to take cognisance of the fact that Information and Communication Technologies (ICTs) are the driving force of this economic model. Moreover, the digitalisation of communication has developed rapidly and led to the delivery of services to a consumer that aims to add value (Welfens, 2002:19). Furthermore, this economic order has brought about what is called a New Consumer who is an independently minded, individualistic and well-informed individual that is also cash rich, time poor and driven by authenticity. This individual suffers from scarcities such as time, attention and trust, and this places emphasis on the fact that services delivered within the New Economy must meet the consumers' expectations of personalised value. As explained by Prahalad and Ramaswamy (2004:4) as well as Kunde (2002), organisations in the New Economy need to embrace the new approach to value creation and place emphasis on the creation of a relationship that offers customised and personalised information. Power *et al*. (2001:26) add that this New Consumer functions as an *always on* consumer that can function anywhere, any time and in any place. In the light of this, Datta *et al*. (2001:5) add that it is imperative for offerings in the New Economy to be based on ease and convenience and offer the consumer an experience at every point of contact. With regard to the New Consumer, Lewis and Bridger (2001:15) also state that this individual has a cynicism towards brands and is adopting a new approach that moves away from the traditional view of brand loyalty and the relevance of brand saliency. This is continuously increasing as the concept of traditional consumer loyalty is diminishing with the New Consumer.

The next section sets out to explain the development of economies in society and the various economic orders will be discussed, starting with the Agricultural Economy around 1700. The characteristics as well as advantages and disadvantages of the respective economic orders are integrated into the discussion and a progression from one economic order to the next is highlighted. This is followed by a discussion on the New Economy and the relevance of the New Consumer as a product of the new economic order. The relevance of ICTs in the New Consumer's life is highlighted and the characteristics of the New Consumer are elaborated upon. It is explained how organisations functioning in the New Economy need to offer the New Consumer services that are based on ease and convenience as well as a customer proposition that is based on value. Furthermore, it is emphasised how businesses functioning in the New Economy have to take the issues that the New Consumer is experiencing, namely information overload and a scarcity of time, attention and trust into consideration and it has to become a priority for businesses to deliver services taking these issues into account.

2.2 THE DEVELOPMENT OF ECONOMIES IN SOCIETY

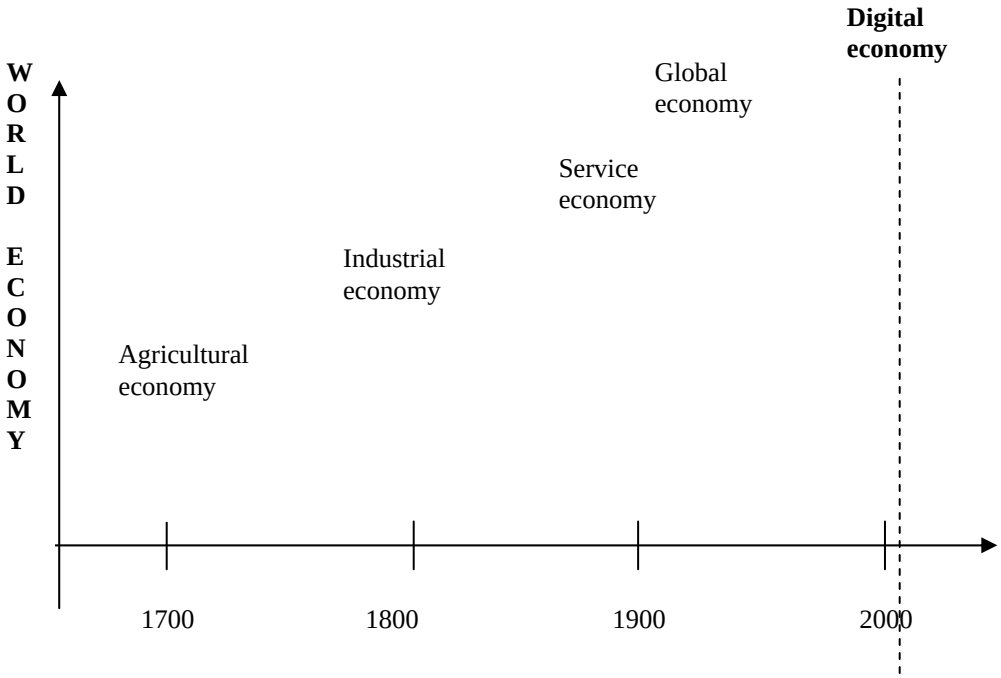
According to Griesel *et al.* (1997:1), economics form part of every individual's life as it influences the decisions of governments and individuals at direct and indirect levels on a daily basis. The term "economics" was coined around 1870 (Anon., 2004a) and comes from the Greek *oikos*- meaning house and *nomos* meaning laws or norms. The term "economics" was initially used for different environments: the house, a town and a city (the *polis* in Greek) (Anon., 2004a). The field of economics comprises a number of potentially irreconcilable theories of economic systems, but as a general rule, economists study human behaviour and welfare as a relationship between ends socially required and scarce means that have alternative uses (Anon., 2004a).

The term "economics" has been used in various contexts over a number of years and thus various definitions are needed to clarify its meaning (Dearle, 1951:1). An economy can be defined as the management of the resources of the state and the community (Dearle, 1951:1). It is a continual or perpetual process that sets out to satisfy human needs, produce what they require and then consume the result (Dearle, 1951:6). The definition supplied by Robins (quoted by Anon., 2004a) describes economics as a social science that deals with the production, distribution and consumption of goods and services. This definition is similar to the one given by Griesel *et al.* (1997:2) who define economy as a science that focuses on the choices made by a community to acquire goods and services with scarce resources. Aldrich (1999:4) concurs and defines it as a systematic way of describing how goods and services are exchanged among members of a given

community. From the definitions stated above, it can be said that the term “economics” has not changed much when compared to a recently formulated definition that sees it as the branch of social science that deals with the production, distribution, consumption and management of goods and services (Anon., 2004c).

The world economy has experienced various economic orders from the 1700s and Aldrich (1999:6) has developed a timeline depicting the development of these different orders. This model, shown in Figure 2.2, illustrates the various economic orders that have been in existence up to the digital economy, which started just after the turn of this century.

Figure 2.2: The evolution of the digital economy (Aldrich, 1999:6)



One of the earliest economic orders was agricultural in nature. This type of economy started its development from the beginning of the eighteenth century (Szirmai, 1997:222). This economic order revolved around producing, exchanging and consuming products that were generated from working with the natural world (Aldrich, 1999:5). As stated by Szirmai (1997:222), “farmers switched to more intensive forms of land use, annual harvests and crop rotation, instead of letting part of the land area lie fallow for one or more years”. The main components of the Agricultural Economy were land and labour, and these elements were the most valuable components for determining economic success in this economic order. This type of economy could function with a minimum of money and technology. Furthermore, many people worked as labourers on large estates owned by aristocrats or on a small piece of land owned by the aristocrats. England was at the centre of agricultural progress and farming methods by 1700, and a leader in its time.

The next economic order to develop after the Agricultural Economy was the Industrial Economy. According to Leung (2002), the Industrial Economy developed during the Industrial Revolution (1750-1850). McCormack (1995:26) and Drucker (1993:26) state that it emerged due to the factory system that developed, and Drucker (1993:27) refers to it as the machine and factory system. This economic order led to human energy being replaced by mechanical energy (McCormack, 1995:26). Leung (2002) concurs and states that the main impact of this economic order was switching from handmade products to machinery production. During this economic order, a shift in focus took place from skill to technology, and Drucker (1993) is of opinion that technology was invented during this time. The word "technology" is derived from the word *téchne* meaning the mystery of craft and skill, and the word *logy*, that is, organised, systematic, purposeful knowledge (Drucker, 1993:25). In this regard, inventors fulfilled a major role with regard to technological inventions, e.g. James Watt redesigned the steam engine between 1765 and 1776, and Robert Fulton floated the first steamship in New York (Drucker, 1993:20).

The Industrial Economy transpired into a post-industrialist society that is referred to by Aldrich (1999:6) as the Service Economy. According to McCormack (1995:461), the post-industrial society is recognised by the fact that it has moved into an era in which most economic activity is based on the provision of services. In addition, Lyon (1988:3) states that the central variables of this economic order, which also make it different from any other identified economic order, are knowledge together with technology and the application of both to provide services. Information technology started to play a role in this economic order as it started shortening the time spent on labour and led to the demise of the production worker. For the first time the wealth created by people performing services exceeded the wealth created through the manufacturing of products (Aldrich, 1999:5; Lyon, 1988:3; McCormack, 1995:461).

The next economic order that transpired from of the post-industrialist society is the Global Economy. The Global Economy, which started at the end of the Second World War, refers to an economic order where economic, political and geographical boundaries became seamless in the exchange of goods and services (Aldrich, 1999:5). Hill (2000:20) concurs with Aldrich (1999:5) and states that national economies have become more closely integrated into a single, interdependent, global economic system. Hill (2000:20) is also of the opinion that the global economic order is more favourable to the practice of international business. This has brought about globalisation, meaning that a shift towards a more integrated and interdependent world economy has taken place. In economic terms, this refers to the globalisation of markets and the

globalisation of production (Hill, 2000:5). Hill (2000:10) stipulates that the Global Economy was characterised by the major advances in information processing, transport technology, the emergence of the World Wide Web (WWW) and the Internet. Furthermore, the development of computer hardware led to increased amounts of information processed by an individual and/or organisation, and technology and technological tools changed the way in which business was conducted.

The Internet, also referred to as the Net, is one of the technological tools that played a role in the formation of the current business arena (Young, 1998:174). The Internet is a worldwide system of linked computer networks operating on a standard protocol that allows data to be transferred between otherwise incompatible machines. The Internet has grown exponentially in the last few years with a user growth rate of 126,4% from 2000 to 2005 worldwide (Anon., 2004b). By 1990 fewer than one million people were connected to the Internet on a worldwide scale. However, in 2000 there were 358 million global Internet users and this increased to 817 million users in February 2005 using the Internet around the world (Anon., 2004b). Another technological innovation that contributed to this economic order, together with the Internet, is the microprocessor as it enabled growth in high-power, low-cost computing. The microprocessor and the impact thereof on the computing industry are evident when the law of Moore is studied as Moore observed that the power of the microprocessor technology doubles every 18-24 months and with that the cost in production of technology hardware drops (Hill, 2000:10).

According to Welfens (2002:8), the aforementioned developments brought about by the Global Economy created a new economic order that is currently adopted by many businesses and has changed the way in which individuals and businesses function. It should be noted that there are various terms used to describe this economic model. This new economic order is also called the Digital Economy as it enables information to be packaged, distributed and consumed in digital form (Welfens, 2002:8). Loewen (2001:31) adds that it can also be referred to as the Information Age. Shapiro and Varian (1999:1) contribute to the terminology synonyms for the New Economy and call it the Information Economy or Network Economy. The New Economy is also spoken about as the Internet Economy because Internet forms an integral part in the construction of the New Economy as it is a low-cost ubiquitous global network that supports rich multimedia exchanges of digital information (Aldrich, 1996:66; Castells, 2001:6; Kourdi, 2001:xi; Welfens, 2002:8; Whalen, 2002).

A model developed by Earl (quoted by Turner, 2000:2) depicts the major advances that took place in the development between the Industrial Age and the New Economy. The New Economy is referred to as the Information Age within the model, as illustrated in Figure 2.2a. The characteristics of the Information Age are as follows:

Figure 2.2a: Characteristics of the Information Age (Earl quoted by Turner, 2000:2)

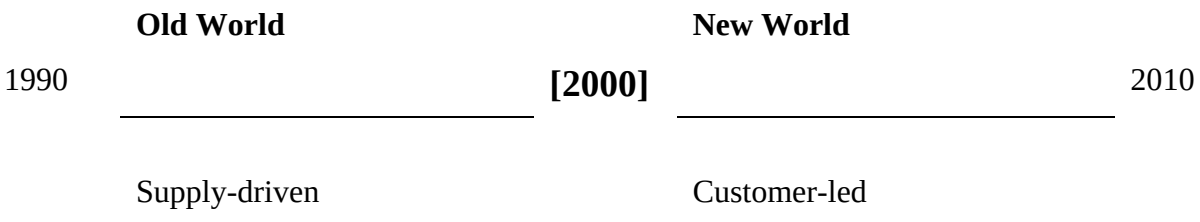
Industrial Age		**Information Age**
From:		To:
Marketplace	Doing business	Market space
Hierarchies	Organising business	Networks
Scarce physical Resources	Economies in business	Limitless digital Resources
Machine/craft workers	Populating business	Knowledge/intellect workers
Real estate and plant	Infrastructure in business	Information and Communication Technology

As indicated by Earl (quoted by Turner, 2000:2), who is supported by Lewis and Bridger (2001:56), the marketplace has transformed into a market space where business can be conducted for 24 hours of every day of the week. Furthermore, Earl's model is supported by Rayport and Jaworski (2001:415) who state that hierarchies have diminished and the organisation functioning in the New Economy now functions on a principle called network economics. This refers to the fact that the New Economy is driven by networks, rather than scale, which means that a company's value is highly dependent on how many users are using that company's network and/or technology (Rayport & Jaworski, 2001:415). Furthermore, Earl (quoted by Turner, 2000:1) highlights that the New Economy has brought about an Information Age characterised by limitless digital resources and notes that the emphasis is no longer on physical resources. In addition, Maguire *et al.* (1994:24) point out that "The economic history of the last hundred years in the advanced and developed countries could be called 'from agriculture to knowledge'" and in the Information Society, information is the most powerful economic and social agent (Dearnley & Feather, 2001). This is supported by Earl (quoted by Turner, 2000:1) who states that the New Economy is based ultimately on the increased salience of information as a commercial tool. Consequently, wealth is created in this society from the application of knowledge to productivity and innovation rather than the allocation of capital and labour. This

has brought about a new set of economics in which intangible assets such as information and knowledge contribute as much as or more than tangible assets to value creation (Mruz, 2000:1). Therefore, within this economic order, knowledge replaces capital as the key resource, and as stated by Aldrich (1999:5) technology is the dominant force, with this author showing how knowledge is applied to technology. The society functioning in this order is referred to as the Information Society due to the fact that information technology forms the basis of this economic order. As stated by Bell (quoted by Trauth, 2000:4), the key characteristic of the New Economy or Information Age is that people work with the brain instead of the hands, and this has created an economy where information is the key driver (Drucker quoted in Trauth, 2000:5). Similarly, Welfens (2002:17) states that the application of Information and Communication Technology (ICT) to the economy has brought about the New Economy. Norton (2001:3) supports Welfens (2002:17) and refers to this as an ideology where information technology (IT) creates growth in productivity, which in turn permits faster growth in output without a rise in the rate of inflation. Loewen (2001:30) adds to the Norton (2001:3) statement and notes that the New Economy is characterised by new information-age companies, digital era businesses and knowledge-driven networks. The abovementioned characteristics are what make the New Economy different from other economic orders.

In addition to the abovementioned, another important shift has taken place in the New Economy as this economic order can be divided into two worlds (Siegel, 1999:3). According to Siegel (1999:3), the first world was called the Old World, which started in 1990 and functioned as a system where companies pushed products through to consumers. After 2000 the second world was identified as the New World and consumers pulled products and services through on demand. According to Siegel (1999:3), the New World ends in 2010 as most buyers will be connected to the Internet and this will be the completion of the customer-led revolution. As illustrated below, in Figure 2.2b, the Old World is recognised by a supply-driven environment and this was integrated into the business management philosophy of an organisation in the specific era. Furthermore, the New World is a world that is characterised by a customer-led environment and the customer-driven philosophy forms the fundamental principle of business management and the philosophy that is followed within the organisation (Siegel, 1999:2).

Figure 2.2b: The transition from the Old World to the New World (Siegel, 1999:2)



Regardless of the definition of the New Economy, there are various basic elements of which the new economic order consists. Welfens (2002:19) describes these elements as follows:

- The New Economy is an economic order reliant on networked computers and advanced telecommunications services, and is thus referred to as the Network Economy, as already established. The digitalisation of communication that has taken place in this economic order has led to the delivery of services that aim to add value (Welfens, 2002:19). Leung (2002) concurs with Welfens (2002:19) and identifies computers and communication networks as the two components that have contributed to the growth of the New Economy. Leung (2002) states that computers work as a foundation while the communication network supplies a framework that provides support. As such, the New Economy is characterised by faster diffusion and innovation that is mainly facilitated by the process of digitalisation. Atkinson and Court (1998) highlight this by stating that speed and innovation are "the new rules of the game".
- The role of markets is important in the New Economy. The use of the Internet in this economic order allows for greater networking possibilities (Welfens, 2002:19). As stated by McGovern (1999:25), one of the most significant changes that the use of technology has brought about is the introduction of a so-called new space within which the consumer lives, socialises and conducts business. Similarly, Watson *et al.* (2002: 335) acknowledges this concept of a new space and calls it the market space. The market space creates more competition for suppliers of standard products that can be offered over the Internet in the global market. Additionally, Watson *et al.* (2002:335) states that the market space provides the seller with an infrastructure and resources to establish a personal relationship with individual consumers.
- The New Economy has led to the convergence of industries and media. The term, "New Economy", is used to refer to the coming together of Information and Communication Technologies (ICTs). It is defined by Fourie (2001:114) as a concept used to create new ways

of producing, distributing and using knowledge, information and entertainment. The New Economy functions with a consumer called the New Consumer. Du Plessis *et al*. (1990:141) define a consumer as someone who has money and the willingness to buy, and in the New Economy the consumer is referred to as the New Consumer. The New Consumer can be an individual of any age, any ethnic group and any income bracket (Lewis & Bridger, 2001:3). This person can be described as an independent, individualistic, involved and well-informed individual with regard to consumer matters (Lewis & Bridger, 2001:4).

Multimedia networking is one of the elements that has become very important in the New Economy and important to the consumer functioning within the New Economy because this individual is referred to as a device-agnostic entity, which means that a multi-communication channel approach is used when communicating or conducting business. This approach assists with the scarcities of time and s/he can use various mediums when functioning or communicating. According to a report compiled by Park Associates (Anon., 2003a), consumers will be increasingly looking towards multimedia networking solutions to compensate for time constraints reinforcing the convergence of technology. The New Consumer, as an individualistic person who is well-informed, seeks authenticity and places emphasis on being involved in the purchasing process (Lewis & Bridger, 2001:4). Likewise, Dillon (2002) acknowledges the development of the New Consumer and refers to the environment in which the New Consumer functions as a new "new" reality. Both Bedbury (2002:16) and Dillon (2002) emphasise the relevance of the New Consumer in the New Economy. Bedburry (2002:16) adds that "In the future, business will ultimately rise and set with the customer, not your best retail distributor or reseller". The New Consumers place emphasis on what they buy and why it is bought, and not on how it is bought (Lewis & Bridger, 2001:4). This is amplified by the lifestyle of the consumer that is based on a fast pace with an abundance of information, choices and means to purchase. Gilmore (2001:17) concurs and believes that society has moved from an industrial society to an information-based society in which the consumer is neither naïve nor ignorant. Furthermore, the author adds that these individuals are making increasingly informed choices about what they want, what they do not want, how they want it and when they want it.

- The New Economy leads to a capital-saving technological progress. Due to the use of technology, this economy requires a smaller investment input to introduce a new company into the market. However, a smaller investment input does not necessarily mean that the return on investment is smaller (Welfens, 2002:18).

- The use of information technology in the New Economy leads to pro-competitive effects, which means that competitiveness in the market allows for more open market entry price competition that is more intense, implying that the consumer can compare suppliers' prices instantaneously while using the Internet and thus choose the supplier with the best offer. This is highlighted by Power *et al.* (2001:26) who state that there are no longer working hour restrictions as the shop front is open for 24 hours of every day and offers the consumer the opportunity to shop anywhere at any time. Turner (2000:4) states that the New Economy has no geographical or time boundaries, which means that the buyer functioning in the world driven by information technology does not have to accept excuses as another supplier is never more than a mouse-click away. The Internet in the New Economy leads to the consumer being more informed and flexible in the purchasing process (Welfens, 2002:20). As mentioned previously, the consumer in the New Economy is known as the New Consumer. The New Consumer is referred to as "new" due to the consumption style that is very distinctive (Lewis & Bridger, 2001:3). These individuals enjoy broad technological advances that enable them to purchase from anywhere at any time and a difference in approach is taken when purchasing a product or service as they have all the competitors' information available when making a purchase decision (Lewis & Bridger, 2001:3).
- According to Welfens (2002:20), there is also acceleration in foreign direct investment in the New Economic order. The New Economy results in many demand curves becoming more price elastic due to a drop in the price of standard products. This is a result of these standard products being offered online in a more competitive global market. The consequence is that additional mergers and acquisitions take place in the market as the profits of the organisations providing these standard products decrease and stronger organisations try to restore the market power by taking over these organisations (Welfens, 2002:20). These are often foreign organisations investing in a given country.
- According to Welfens (2002:20), the New Economy can also be perceived as more unstable than previous economic orders. The new economic order is more market based, more competitive, more innovative and more international, and the reason for the instability within the New Economy is due to the competitiveness in the market. This might lead to price fluctuations in the market that may cause instability, and it is for this reason that Atkinson and Court (1998) coin the New Economy as the risk society.
- The New Economy creates a global platform for fast innovation and fast diffusion. This element refers specifically to technology as hardware being combined with new software and the resultant knowledge being dispersed. The diffusion of knowledge plays a role as media

such as the Internet create avenues for the sharing of information to create knowledge that forms the basis of this new economic order (Welfens, 2002:18).

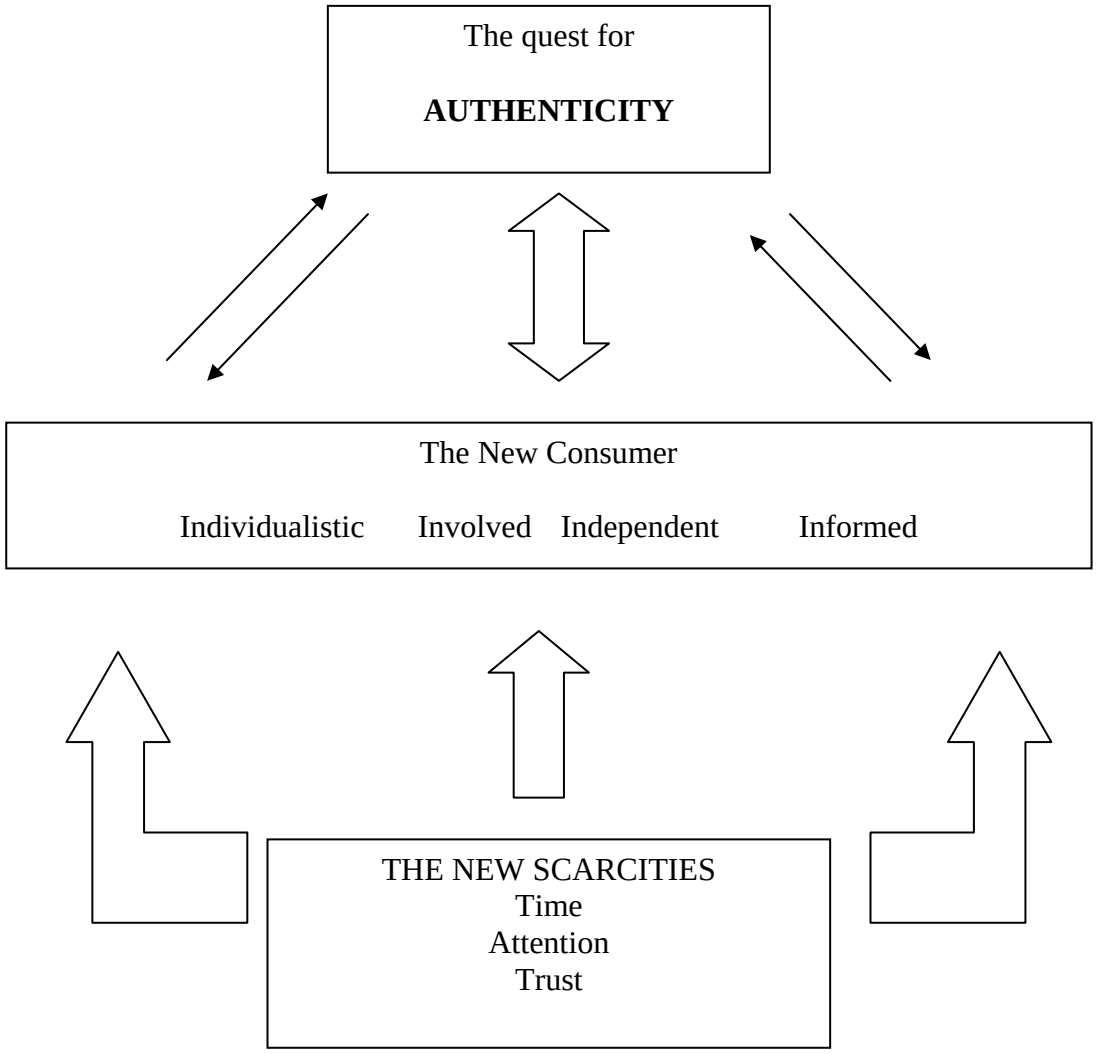
- The New Economy demands more knowledge and skilled labour, and thus places emphasis on the education sector (Welfens, 2002:21). As knowledge plays an increasingly important role in the 21st century, the production of knowledge in the digital age should have a larger productivity effect (Welfens, 2002:18). The Internet as a medium in the New Economy is a powerful education tool that can be used to supply training and educational programmes. This is due to the fact that this medium forms the basis of the New Economy and this medium is accessible to users on what is essentially an unrestricted equal basis (Lawrence *et al.*, 2003:9).

The consumer plays a major role in all the elements stated above. A holistic perspective of the New Economy is very important as this economic order has had an impact on the consumer that functions within it. This is supported by Bedbury (2002:16) who states that the New Economy revolves entirely around the consumer. A new species of consumer (Dillon, 2002) has developed and this New Consumer, as established, has a different approach to the purchase decision and involvement in the purchasing process (Lewis & Bridger, 2001:3). This is due to the use of the Internet and Information and Communication Technology.

2.3 THE NEW CONSUMER

The New Consumer has distinct characteristics when compared to consumers functioning in previous economic orders. As stated by Lewis and Bridger (2001:3), the characteristics of the New Consumer can be defined under the heading: The Soul of the New Consumer. Lewis and Bridger (2001:5) encapsulate the soul of the New Consumer contained in Figure 2.3 and highlight the characteristics and scarcities of this individual.

Figure 2.3: The soul of the New Consumer (Lewis & Bridger, 2001:5)



As depicted in Figure 2.3, the New Consumer functions as an individual in the New Economy and experiences a shortage of time, attention and trust. These scarcities have developed due to the impact of Information and Communication Technologies on society, and this New Consumer is typified as having a lack of trust towards established authority that has contributed to an increased cynicism towards brands. These scarcities include cash, choice and availability.

The New Consumer is identified by various characteristics that make this individual distinguishable from the Old Consumer. As referred to by Lewis and Bridger (2001:4), Old Consumers refer to consumers that existed before the development of the New Consumer, and these consumers experienced different scarcities to the New Consumers. These characteristics are discussed below to establish a better understanding of this individual.

2.3.1 Characteristics of the New Consumer

The characteristics of the New Consumer include the following:

- The New Economy has no geographical boundaries. This means that the consumer functions in a global environment where s/he can purchase from any outlet around the globe at any time of day. As stated by Leer (2000:1), business can be conducted on a global scale where physical boundaries set no limitations. The impact of this has been that the philosophy of "think global, act local" as suggested by Loewen (2001:33) becomes relevant. This sentiment is supported by Lindgren *et al.* (2002:96) who state that globalisation is taking place and earlier boundaries between class, nation, race and culture are disintegrating. This has resulted in globalisation bringing about a new global culture called a globally homogenous lifestyle. This author states that on a global level, consumers all over the world are wearing the same clothes, listening to the same kind of music and performing many other similar actions. Lindgren *et al.* (2002:96) concur with Loewen (2001:33) and state that "there is much greater heterogeneousness at local level". Globalisation has opened up the world of communication, but people locally have a sense of having their own thoughts, values and lifestyles. This has been made possible by information technology, such as the Internet, on which the New Economy relies, as this medium enables the consumer to purchase any product at any time or in any place. It is for this reason that Cram (2001:3) refers to the Internet as being the largest level playing field due to its universality.
- The availability of information technology allows the consumers in the New Economy to engage in a dialogue and a consultative process at their own convenience (Dennis *et al*., 2004:5). This is supported by an approach called the "Five Powers of the Connected Consumer", which focuses on the five powers of the New Consumer as an individual armed with ICTs in the New Economy (Anon., 2002h). These five powers are listed below (Anon., 2002h):

    1. Information access

       The first power is called information access and refers to access to unprecedented amounts of information leading to the fact that the consumer has knowledge to make more informed decisions. Access to information also enables the retailer/supplier to offer products and services to a potential consumer in a virtual environment at any time and in any place, resulting in a scenario where a transaction can be processed via the electronic market space without the intervention of another individual. The process allows for disintermediation which means that it offers the opportunity to eliminate intermediaries (Harris & Dennis, 2002:16).

2. Global view

The second power of the New Consumer is a global view, which means that the consumer has the ability to view what is taking place around the globe 24 hours a day. This leads to greater competition in supplier levels because information technology offers the potential consumer the advantage of comparing prices online as the buyer is instantaneously aware of the availability of the product due to cross-linkages. This also enables the buyer to undertake a competitive analysis that ensures that an informed decision is made as the buyer can compare sellers' offers in the market space. This is one of the advantages that the New Economy offers the New Consumer as this individual experiences one of the most fundamental problems of contemporary lifestyle, which is a shortage of time. This individual emphasises quality of life and experiences scarcities of time as s/he feels that there is too much to do with too few hours in the day to satisfy all the demands made on him/her. These individuals feel that they are time starved and self-indulgent, and they crave information (Anon., 1998a.) As stated by Lewis and Bridger (2001:45), these individuals are driven by necessity and not by choice, and New Consumers use time for their own convenience. This consumer is branded as a "new breed of consumer" that looks to technology to survive in the New Economy (Anon., 2001b). With regard to the time issue discussed, technology has brought about time pressures on the individual who distorts time to meet the demands that are made. In the light of this issue, Lewis and Bridger (2001:54) refer to the seven time warps that the New Consumer experiences.

The first time warp is called living in the fast lane and refers to the fact that the New Consumer has an attitude that things should happen fast and finish quickly. This individual wants to move over to the next challenge or task. These time-starved individuals conform less to communal time and make individual choices about their lives that are non-conformist (Lewis & Bridger, 2001:55). This contributes to the second time warp which is about the acceleration of business and refers to the fact that the Information Age and the New Consumer have brought about a market space where events occur at a faster pace (Lewis & Bridger, 2001:56). This has led to the need for "round the clock and round the globe services" provided at consistently high standards of product and service quality (Lewis & Bridger, 2001:56). In view of this, the third time warp refers to the fact that the New Consumer warps time by making purchases before the financial means are available to do so (Tapscott *et al*., 1998:130). Furthermore, Lewis and Bridger (2001:57) state that with credit becoming increasingly available, the new

consumer follows a philosophy of “live now, pay later”. In addition, the fourth time warp refers to the fact that the New Consumer has become an individual that wants to shop around the globe at any time of day for seven days a week. This individual is “an always on” consumer and wants to shop in an always open environment, and this has resulted in home-shopping becoming increasingly important to the New Consumer. This is enabled by communication technology such as the Internet and wireless devices, which are addressed in the fifth time warp that has to do with multitasking. According to Poniewozik (2001:84), multitasking is essential as the New Consumer works under intense and often conflicting time pressures. The New Consumer needs to survive in the fast-paced environment and does so by using several forms of media simultaneously (Lindgren *et al*., 2002:102). The aforementioned author adds that the New Consumer has also increased mental bandwidth, which means that more information is processed simultaneously, by means of multitasking due to the fact that s/he is exposed to an overload of information. In the light of this information overload, the sixth time warp reiterates the fact that the New Consumers demand up-to-the-minute services and newer and better products. A “just in time” strategy has become the norm for businesses functioning in the New Economy (Lewis & Bridger, 2001:59). The last time warp refers to the fact that the New Consumer values time and tends to use the services of experts in order to avoid the risk of wasting time. This individual ensures that time is spent wisely by turning to experts to tell them what to read, watch and listen, and hence suppliers in the New Economy are continually seeking new ways of saving the New Consumer time (Lewis & Bridger, 2001:60). Suppliers use recommendations or free sneak previews are used to supply information and influence the New Consumer in the purchase decision.

3. Networking

   The third power of the New Consumer is identified as networking and refers to the fact that consumers naturally coalesce around common skills, interests and experiences (Anon., 2002h). This leads to networking among consumers where “communities of interest” form where individuals communicate without the constraints of geographical boundaries (Anon., 2002h).

4. Experimentation

   The fourth power of the New Consumer is identified as experimentation and refers to the fact that consumers use the Internet to experiment with and develop products (Anon., 2002h). This medium allows for consumers creativity to develop an organisation’s product and services beyond software and digital products. Examples hereof include cooks sharing recipes, gardening enthusiasts sharing tips on how to grow organic

vegetables or home-owners sharing tips on home improvement projects using ICTs in the New Economy (Anon., 2002h).

5. Activism

   The last power of the connected consumer is activism, which refers to the fact that New Consumers functioning within the New Economy have the opportunity to provide unsolicited feedback to organisations and to each other (Anon., 2002h). These consumers learn in the new economic environment and become more discriminating in the choices about what they buy (Anon., 2002h). Furthermore, the networking power as discussed before creates an avenue to speak out, which creates the opportunity for organisations to open the door to competitive opportunity (Anon., 2002h).

- The New Economy is characterised by a knowledge management that entails a decline in the cost of creating, moving, managing and processing individual documents, transactions and other forms of information. This has taken place due to the intervention of information technology, and as stated by Welfens (2002:17), information is now digitised and stored on microchips and is accessed, managed and transported more easily. The impact of this on the New Consumer is that faster, more powerful, and more flexible networks are used in the New Economy to deal with information (Welfens, 2002:17).
- Ease and convenience are other important characteristics of the New Economy as an economic order (Dennis *et al*., 2004:5). These authors add that accessibility and responsiveness have become key terms for the consumers in the New Economy as individuals have the freedom to access any information or purchase any goods or services over the Internet in the comfort of their own home or office. The New Consumer has access to useful information that influences purchase decision-making and can respond to a message or competitive offer instantly.

The New Consumer is an individual that expects his/her requirements to be met quickly, with high quality and convenience (Lindgren *et al*., 2002:107). "A new culture of convenience is being created" (Anon., 2000b). It is evident that the drive towards ease and convenience has created an environment that is not limited by geographical or time boundaries, and has resulted in the New Consumer using various technological devices that fulfil the need for both real-time information and communication anywhere, independent of the user's location (Durlacher quoted by Junglas, 2002:22). An example of a brand that has made ease and convenience a priority is Waitrose. It was the first retailer in the UK to offer convenience by means of mobile transactions. Waitrose enabled consumers to buy and receive useful information, including a store locator and recipe for the day, via a mobile device. Waitrose

expect that business will first be generated from last moment purchases such as flowers, chocolates or champagne but this will develop into the purchase of many other goods and services (Anon., 2001d:15).

- The New Economy is relationship driven, which means that offers are customised and personalised information about the consumer is collected. According to Johansson (2000:532), the New Economy is structured on a one-to-one relationship that exists between the buyer and the seller, and the seller has the opportunity to offer customised products and services to the buyer at competitive rates. This is reiterated by Pattmore and Renner (quoted by McGovern, 1999: 336) who clearly indicate that the ability to build and maintain customer relationships systematically is rapidly becoming a competitive necessity in the New Economy. Similarly, Heil (quoted by McGovern, 1999:336) reiterates the importance of relationships by stating that "relationships are the currency of the future". Rapp and Martin (2001:16) also acknowledge that the New Economy can foster strong relationships between the buyer and seller. In addition, Naisbitt (quoted in Lindgren *et al*., 2002:100) is of the opinion that the phenomenon known as "high tech–high touch" becomes important when considering a relationship with the New Consumer. This means that although the New Consumer is more reliant on technology, there is a greater need for experiential marketing, which refers to physical meetings, real experiences and sensory experiences (Lindgren *et al.*, 2002:100).

In support of the abovementioned, McGovern (1999:336) emphasises that there are certain rules when creating a relationship with the New Consumer. The author states that there is no average consumer and the supplier needs to get to know the consumer and build a solid relationship based on trust. The consumer's time must be valued and seen as important, which also means that the consumer must not be taken for granted. The New Consumer places emphasis not only on satisfaction, but also on instant gratification. Thus, the highest levels of quality and service are required to create a relationship. This is supported by Gobé (2001:xxii) who states that it becomes imperative to create personal dialogue with the consumers. This is reiterated by Vavra (quoted by Freedman & Sudoyo, 1999:3) who states that engaging in dialogue with the consumers tells them that they are important. "It assures customers that their opinions are sought and that the company is interested in serving their needs. Dialogue also can ease a wary customer's mind, soothe an angry customer's temper, or reaffirm a satisfied customer's purchase decision." (Vavra quoted by Freedman & Sudoyo, 1999:3.) A relationship strengthened by dialogue ensures that organisations know their customers and have a solid understanding of their individual needs and expectations.

- Additionally, the relationship can be strengthened by creating an experience around every contact point that is special to the consumer. As stated by Pine and Gilmore (1999:2), the importance of the experience offered to the consumer is increasing; hence, the New Economy can also be called the Experience Economy or the fourth economic order. In view of the transformation with regard to economic orders, it is relevant to take cognisance of the fact that the first economic order placed emphasis on commodities while the second economic order focused on goods. The third economic order placed emphasis on services (Pine & Gilmore (1999:2). The aforementioned authors define an experience as an event where the consumers pay to spend time enjoying a series of memorable events that a company stages to encourage them in a personal way. Pine and Gilmore (1999:2) add that the customer or client is seen as a guest of the brand or company and even the most mundane transactions can be turned into an experience. Lewis and Bridger (2001:6) support this by stating that all consumer contact must be an experience about which consumers can talk. This is also supported by Hatcher (2005:38) who states that context planning is one approach that is used to create and strengthen the aforementioned. As stated by O'Brien (quoted by Hatcher, 2005:38), context planning focuses on the optimal environment for delivering messages. It indicates the most engaging way to connect with consumers, and how it will be achieved (Hatcher, 2005:38). Context planning offers the brand the opportunity to create synergy between the message and the medium by providing the framework for the media plan and an in-depth understanding of the creative idea used in communication (Franklin quoted by Hatcher, 2005:38). Correspondingly, Lewis and Bridger (2001:6) support the idea of context planning and add that if any consumer contact goes wrong, it needs to be fixed quickly as it will be the marketers who understand the consumers' media consumption habits, lifestyle interests and purchase behaviour who will survive in the New Economy (Misloski, 2005:17). Pine and Gilmore (1999:12) concur and state that the abovementioned is very relevant as the experience offered to the consumer perishes upon its performance while the value of the experience lingers in the memory of any individual who was engaged in the event. To ensure that the consumer has an experience, goods and services need to be experientialised, which means that goods need to be "inged" (Pine & Gilmore, 1999:16). This implies that the focus shifts from the internal mechanics of the goods and/or services and how it performs to the individuals and how they perform when using the good(s) (Pine & Gilmore, 1999:15). This can be enhanced by focusing on the following:

    1. Create a brand image that emphasises the experience that customers can have surrounding the purchase, use or ownership of an item (Pine & Gilmore: 1999:15).

Miloski (2005:24) adds that marketers need to establish and maintain the strong brand in the market.

2. Add elements that enhance the customer's sensory interaction with the brand. This accentuates the experience (Pine & Gilmore, 1999:15). This is supported by Miloski (2005:15) who adds that creative design that stands out from the competition needs to be integrated.
3. Limit the availability of a "hot" item as this can turn the ownership of the item into an experience (Pine & Gilmore, 1999:15).
4. Create exclusivity around the brand by forming a club and charging the consumer for the experience of receiving the brand.
5. Stage the brand's own experience. This can be done by adding museums, amusement parks and other attractions to the factory output. In addition, Miloski (2005:24) states that the brand needs to give consumers something to talk about thus encouraging word of mouth. This will result in consumers becoming the sales force (Miloski, 2005:24).

- From the aforementioned, the relevance of value and meeting the consumers' expectation of personalised value within the New Economy becomes important. As stated by Keller and Lehmann (2003:27), the value of the brand ultimately resides with the consumers. Brands need to prove themselves to a more sophisticated consumer when trying to add value in the New Economy. Within this economic order, it is no longer sufficient to provide Customer Relationship Management (CRM), which is defined as the core business strategy that integrates internal processes and functions, and external networks, to create and deliver value to targeted consumers at a profit (Buttle, 2004:34). Furthermore, Anderson and Kerr (2002:2) define CRM as a comprehensive approach to create, maintain and expand customer relationships. As a satisfied customer does not always mean a loyal customer, there needs to be a move beyond CRM to a unique and consistent customer experience (Anon., 2003b). Pine and Gilmore (1999:2) support this statement and add that it is crucial that the brand stages on experience. Brown (1999:13) describes an experience as a private event that occurs in response to some kind of stimulus, be it emotional, tactile, aesthetic or intellectual. The author adds that experiences are usually not self-generated but induced as they are born to something external to the subjects. The engineering of customer experiences is an important strategy for establishing and maintaining customer preference for an institution (Anon., 2002g). In addition Schmitt (1999:14) adds that customers want products that match their lifestyles or that offer the allure of sharing in the lifestyle that the product represents. The author states that customers want experience and those experiences count when they consider the value of a product. This sentiment is supported by Glover (2004:87) who states that the

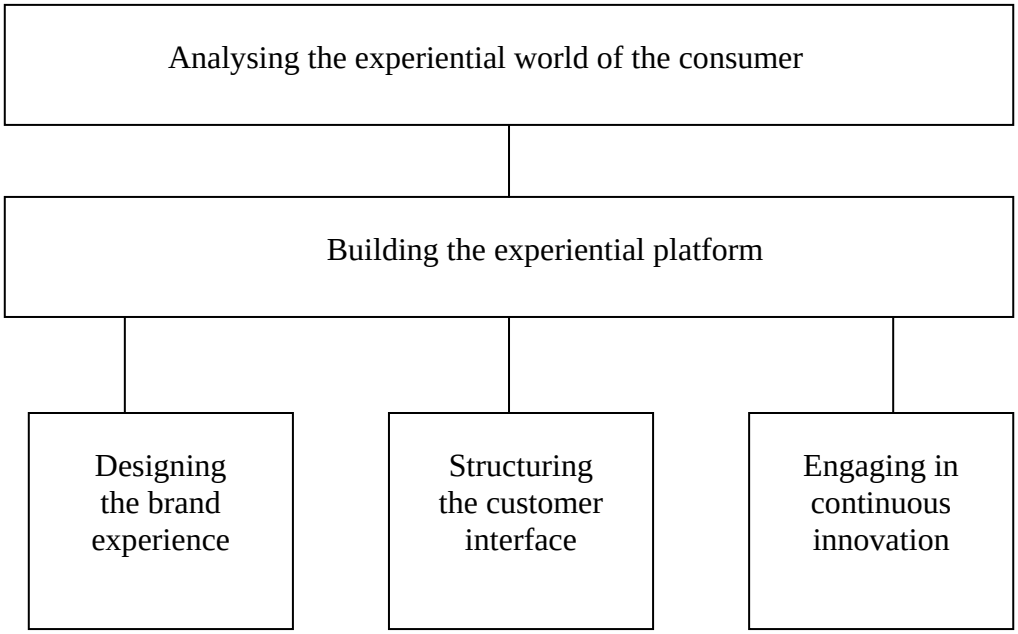
role of the brand is not based on the ultimate financial gain but on how the brand enhances the complete consumer brand experience. As stated in the IOMA Report on Customer Relationship Management, “People aren’t content merely to shop or consume anymore, so the smart business person also gives them an experience” (Anon., 2002g).

Schmitt (2000:25) has developed a new approach with regard to relationship management and the development and management of this phenomenon. It is called Customer Experience Management (CEM) which Schmitt (quoted by Kiska, 2002:28) defines “as the process of strategically managing a customer’s entire experience with a product or company”. In business, CEM refers to a management practice aimed at driving growth, increasing revenue, and spurring organisational change by ensuring that customer experiences meet their expectations. Another definition has been developed by Fluss (2002) who states that Customer Experience Management extends and leverages information gathered in the contact centre to enterprise decision makers, senior management, and sales and marketing organisations. This information can be used to increase revenue, improve customer satisfaction and loyalty, identify trends and customer concerns, and improve risk management. Research conducted by McLean *et al.* (2001) shows that the key benefit of CEM is that it enables the business to move beyond the point of knowing what happened to being able to understand why it happened. Taking the aforementioned into account, Kiska (2002:29) points out that CEM aims not only to capture what customers did in the past, but also to anticipate what they are going to do in the future, thus gaining a 360 degree focus on the consumers. By allowing a deeper understanding of customers, based on listening to them, the business can be responsive to the needs of these customers. CEM provides the means to retain valued and long-standing customers as it takes a forward-looking view of what customers expect of suppliers (Kiska, 2002:28). McLean *et al.* (2001) supports this opinion and adds that the benefit of CEM can be achieved only when investment takes place within capturing, storage and retrieval/analysis.

As depicted in Figure 2.3.1 the five-step framework of CEM is both analytical and creative, thus using a two-pronged focus. The main focus is externally on the consumer and then moves internally to the employees in the organisational structure. According to Schmitt (2000:25), it is essential that marketers provide consumers with the correct environment in order to induce experiences that are enjoyable and in turn allow consumers to view the brand as likable, worthy and appealing. Organisations also need to use knowledge that has been gathered, and orchestrate and integrated a series of clues that collectively meet or exceed

people's emotional needs and expectations. Furthermore, it is important to note that while the first two steps follow each other respectively, steps three to five do not have to be implemented in any specific order. Schmitt (2000) states that three steps can be managed in a parallel manner, depending on the specific strategy that needs to be implemented.

Figure 2.3.1: Five-step framework of CEM (Schmitt, 2000:25)



As illustrated in figure 2.3.1, the first step involves the analysis of the experiential world of the consumer and requires an in-depth analysis that will offer the marketer insight into the socio-cultural and business context of the consumers. Furthermore, the second step of the five-step framework of CEM (Schmitt, 2000) is building the experiential platform. This includes a multi-sensory representation of the kind of experience for which the brand stands. Once the platform is identified, it must be implemented into the brand experience (Schmitt, 2000:27). This includes all the experiential elements, such as logo, signage, packaging, online communication or advertising. The brand experience then needs to be implemented into the consumer interface, which consists of contact points where the consumer comes into contact with the brand. As indicated by Hatcher (2005:38), the term media in the New Economy has expanded to include all the means in which consumers interact with brands, referred to as contacts. The model indicates that the platform needs to be dynamic and interactive as experiential consistencies over time and across many touch points are very relevant in this step. The last step is engaging in continuous innovation. This refers to the fact that the experiential platform needs to be implemented in new product development by using

creative marketing events. Schmitt (2000) adds that “fine-tuning of the experience at every point of contact” is very important.

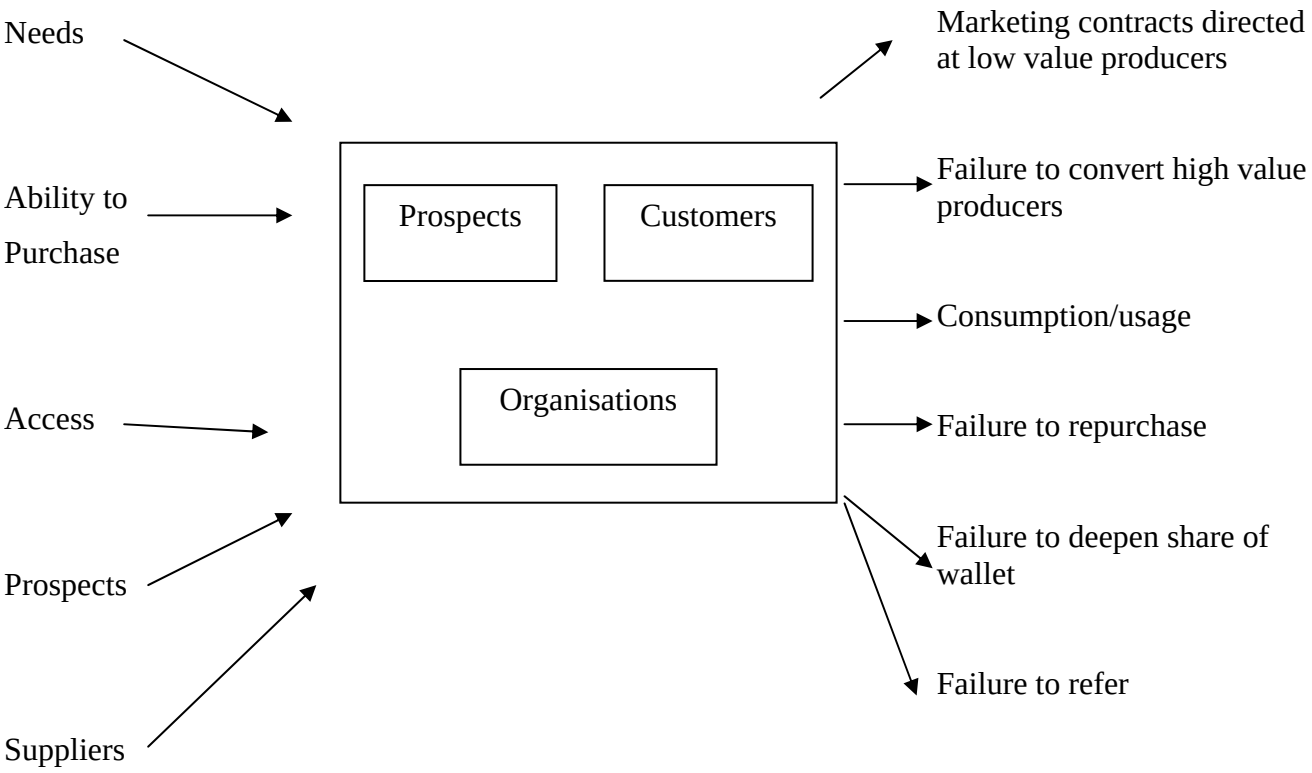
One example of an organisation that uses the CEM approach is Swissair. This approach has been adopted in support of new levels of customer care and offers the consumer a complete experience when using the airline. When the consumer becomes a Swissair passenger, the process of checking in and boarding the aeroplane has been modernised. An application, developed by IBM, is used that enables Swissair passengers, using a web-enabled phone, to check in for a booked flight (Anon., 2001g). In this way, Swissair has analysed the environment in which the New Consumer functions, and has recognised the value of Information and Communication Technology in the life of the new consumer. This Swissair service was initially available in Zurich for selected frequent flyers. Swissair is the world’s first airline to provide such a service to its passengers. Passengers use their cellphones to check in and receive information on the web-enabled phone that would normally be printed on the boarding pass. These details would include the exact departure time, gate and seat number. The unique experience is enriched by the fact that the passenger is automatically updated on information in the case of any changes. From the abovementioned example, it can be noted that Swissair has created an experiential platform where the customer interface plays a vital role in creating value for the consumer.

Furthermore, another approach that supports the fundamental principles of Customer Experience Management is called customer ecology, which is defined by Nash and Shulby (2005:56) as an approach to maximise the value of the customer franchise by managing prospects and customers as limited and precious resources. According to the approach of customer ecology, the marketer focuses on conditioning the marketing environment, seeding, cultivating, conserving and recovering customers similar to an ecological process within the realm of biology. Similarly, environmental ecologists look at the transfer of energy among the various layers of the biosphere and the customer ecosystem can be viewed as one in which value is realised and transferred (Nash & Shulby, 2005:57). As indicated by these authors, there is no transfer and no system without value. Customer ecology’s underlying assumption is that customers are a finite resource that must be managed carefully to avoid waste. The approach focuses on the ways in which transition from one state to another takes place within the customer: from prospect to shopper/inquirer; from shopper/inquirer to first-time buyer; from first-time buyer to repeat buyer; from repeat buyer to brand advocate. The authors add that it is measured by the value that is transferred from the prospect universe to

the organisation (Nash & Shulby, 2005:56). Customer ecology complements the market offering and seeks ways in which to optimise the value of the customer by attempting to manage the purchase activities of the customer (Nash & Shulby, 2005:56). These authors also highlight the lifetime value (LTV) as a measure of value in the customer ecosystem and stipulate that potential value comes from five customer needs dimensions. The elements listed below are also placed in the context of a customer ecosystem as illustrated in Figure 2.3.1a. These five elements are as follows (Nash & Shulby, 2005:56):

- Unsatisfied needs.
- The number of people with these unsatisfied needs.
- The ability or inability of prospects to purchase a product to satisfy those needs.
- The existence and number of suppliers that can satisfy those needs.
- The prospects' access to communication and points of sale for products that satisfy those needs.

Figure 2.3.1a: The customer ecosystem (Nash & Shulby, 2005:57)



All five elements mentioned above combine within the ecosystem to create value, which is transferred from level to level in the ecosystem (Nash & Shulby, 2005:57). It should also be noted that value leakage can take place, which refers to value transfer being incomplete in the consumer ecosystem (Nash & Shulby, 2005:57). In some instances, value never realises or is never transferred as the communication and promotion that reach the individual are already satisfying their need and the additional efforts are redundant. Furthermore, value can be lost when the communication that reaches the individual is poorly targeted or the individual does not perceive the market offering as a solution to a need.

- Another characteristic of the New Consumer in the New Economy is consumer loyalty, which has changed drastically in the New Economy. There is more than one opinion on the formation of consumer loyalty in the New Economy. Lewis and Bridger (2001:178) state that the New Consumer has the potential to become far more loyal than the Old Consumer. However, a new debate on the concept of consumer loyalty to brands has emerged. This is mostly due to studies performed by Andrew Ehrenberg of South Bank University. The debate is about the profitability of loyal consumers versus non-loyal consumers, including the perception that consumers tend to purchase a certain brand constantly and are therefore brand loyal. The new approach focuses on a move away from the traditional view of brand loyalty to a new paradigm called brand saliency. Brand saliency refers to a brand's ability to be distinctive in the consumer's mind during the purchase situation. The definition formulated by Romaniuk (2004) describes it as a brand's propensity to be noticed or come to mind in buying situations. Farquhar (2004) points out that brand saliency therefore occurs when a brand stands out from the others in the individual consumer's mind.

  In comparison to the abovementioned, the main idea behind traditional brand loyalty stipulates that loyal consumers are more profitable, and it is cheaper to keep existing loyal customers than it is to obtain new customers (Anon., 2004d). This is reiterated in an article dealing with the dispensing of loyalty where it is said that "It costs less money to serve loyal customers. They provide the best opportunities to cross-sell and up-sell." (Anon., 2002f.) Recent studies conducted by Ehrenberg on the purchasing habits of consumers have led him to argue this belief. Ehrenberg's findings show that "often the most loyal customers are the least profitable" (Anon., 2002f). This relates back to the 80/20 rule, which states that 20% of a brand's customers account for 80% of its profits and Ehrenberg denies this rule due to his findings that reflect that 20% of loyal buyers buy infrequently. Furthermore, the loyal buyers will only need a specific amount of a product and will buy again once the product is finished. However, the light consumers who buy that specific brand only once or twice a year, added

up, account for more sales and ultimately greater profits than the so-called loyal consumers (Anon., 2002f).

Furthermore, research conducted by Sharp (2000) shows that loyal buyers "tend to buy from fairly fixed repertoires of brands". In comparison, Kennedy (quoted by Sinclair, 2000) is of the opinion that customers are not necessarily loyal to just one brand. Romaniuk (2004) supports Kennedy's statements when it is stated that marketers have found that no consumer is 100% brand loyal. A customer who is supposedly loyal will only select a specific brand 6% of the time (Romaniuk, 2004) and the rest of the time, a competitor on the repertoire list, who also fulfils the same need, will be selected. Ehrenberg (quoted by Anon., 2004k) supports this opinion and states that every consumer goes into the purchasing process with a consideration set and that there is no loyalty to one set of brands as consumers have steady ongoing relationships with several brands (Anon., 2002f). Consequently, this has led to consumers running with repertoire sets of brands that they are aware will satisfy their need during the purchase decision. This has resulted in a new definition being developed for loyalty, which states that loyalty is "an ongoing propensity to buy one's habitual brand or brands" (Anon., 2002f).

Consumer loyalty is once again questioned when the reasons for the development of the repertoire list are studied. One of the reasons for consumers not solely remaining with a certain brand is due to the fact that brands are chosen based on the individual's mood state or emotion. A second reason for the switching of brands is due to the increasing number of competitive brands in that product category. The traditional approach to marketing was that in order to build and refresh brand saliency, marketers need to differentiate the brand and show how it is a better product. However, Romaniuk (2004) and Kennedy (2000) believe such activities with regard to differentiation are often misleading and can actually hamper salience-building activities. This is confirmed by Ehrenberg (2004) who discovered that competitive brands do not have to appear different for consumers to choose them and this is reiterated by Romaniuk (2004) who states that marketers should focus on maintaining clearly branded communication that can enhance existing memory structures.

Research conducted by Romaniuk (2004) shows that consumers do not really like brands, and do not spend the majority of their time thinking about brands. The author adds that consumers ignore marketing messages most of the time and will only pay attention when they have a need for a product. Situational factors and events will determine when consumers

will think about purchasing a brand, and the only reason that a brand is not chosen is based on the fact that consumers are not aware of that brand at the time of making the purchase (Romaniuk, 2004).

- Another characteristic of the New Economy is information overload and as stated by McGovern (1999:60), “Information overload is the single greatest problem not simply facing the Internet but facing everyone in practically every aspect of life in the digital age”.

  The magnitude of this problem is realised when it is considered that the sheer volume of a weekday edition of the *New York Times* contains more information than the average seventeenth century citizen would have come across in a lifetime (Lewis & Bridger, 2001:52). Another example of information overload can be illustrated when it is considered that the average *Fortune 1000* worker is sending and receiving approximately 178 messages and documents every day via the personal computer, which includes emails, instant messaging and other documentation (Anon., 2003h). Taking this into consideration, it must be noted that there is enough scientific information written everyday to fill seven complete sets of the Encyclopedia Britannica and there is sufficient scientific information written every year to keep a person reading day and night for 460 years (Siegel quoted by Anon., 2003h). Dillon (2002) illustrates the impact of information overload on the consumer when it is stated that the sum of all human knowledge has doubled between 1900 and 1950 (which is just fifty years). It is currently forecast that human knowledge doubles every ten years. The same author forecasts that the rate of knowledge growth will take only 73 days to double if it continues at the current rate of change.

  The impact of information overload is also illustrated by an international survey conducted by Reuters in the late 1990s that examined the information overload experienced by executives in the UK, the US, Hong Kong, Singapore and Australia. This study found that in order to deal with the sheer volume of information crossing their desks in an average week, 49% (almost half) regularly worked late and took work home over weekends (Lewis & Bridger, 2001:49). The New Consumer feels the need to stay informed as 85% of the respondents (executives) from this study indicated that it is imperative to keep informed in order to keep pace with the opposition (Lewis & Bridger, 2001:49). The New Consumers are also sacrificing sleep as they are getting about ninety minutes less sleep a night than people did a century ago (Martin quoted by Lewis & Bridger, 2001:50). The New Consumer needs to survive in this fast-paced environment and as stated by Nobel Prizewinning economist Herbert Simon (quoted by Lewis & Bridger, 2001:64) “...a wealth of information creates a

> poverty of attention". The poverty of attention is also referred to as "information amnesia" which means that a certain amount of information flowing around the individual is blanked out and the outcome is that a message is ignored unless it is understood quickly (Lewis & Bridger, 2001:65).

Furthermore, this digital age has given people access to more information (e-information) than they can digest, and technology is used to assist the New Consumer in dealing with the scarcity of attention due to the information overload (Aldrich, 1999:12). An example of the use of technology is the pinpointing of a person's geographic position through the mobile device. This creates many opportunities with regard to location-based services (l-commerce) as the Starbucks example of a location-based service strategy has proven (Anon., 2002b). The Starbucks approach is an example of communication being applied in a context-specific scenario. This makes it easy for the consumer to locate the store and take note of any specials that Starbucks might have. Consumers in the United States and Europe can receive messages on their mobile device from Starbucks. This will happen when the customer is in the vicinity of a Starbucks coffee-shop. Starbucks offers the customer an electronic coupon for one dollar off the next cup of coffee (Giussani, 2001:166). This is a strategy that counteracts the information overload that the consumer experiences. In the event of the consumers not noticing the Starbucks coffee-shop or not being aware of its location, while being overloaded with other advertising messages, they are now made aware of Starbucks and what it can offer at that specific time.

2.4 CONCLUSION

A New Economic order called the New Economy, also referred to as the Digital Age, is the current economic order and it is different from all the other previous economic orders that have been in existence. This economic order places emphasis on the relevance of ICTs, especially the Internet, as these media play a major role in developing a market space in which businesses serve the New Consumer. The New Economy, as an economic order, focuses on the use of information and the application of knowledge as the key driving force. ICT tools are used to deal with the overload of information and multimedia channel strategies are employed by both the individual and organisations. Furthermore, the consumer functioning within this economic order, the New Consumer, is a product of this economy and has attributes that have been developed specifically by the characteristics of this new economic order. These include scarcities of time and attention, a drive for authenticity and a person that is individualistic and well informed. The New Economy has placed emphasis on the delivery of customer proposition when delivering products and

services to the New Consumer, and it is imperative to create value and an experience around those offerings. Furthermore, the organisation functioning in this New Economy has to prioritise these important issues for the New Consumer, namely scarcities of time, attention and trust. Consequently, the way in which organisations deliver value to the New Consumer has changed with the emphasis on the delivery of an experience and the management of that experience at all points of contact with the consumer. In the light of this, a shift from relationship offering to experience offering is one of the major changes that this new economic order has also brought about. It has also become apparent that saliency of brands is more relevant than customer loyalty as loyalty is not a permanent characteristic found in the New Economy. Moreover, due to the trust issue that the New Consumer experiences in the New Economy, ICTs and security issues around technology have also become imperative.

Chapter three deals with the concept of electronic business (e-business) and the application of this model as a business model in the New Economy. Chapter three will explore how e-business is applied by organisations in the New Economy and how this model differs from other business models. Furthermore, the discussion will progress to electronic commerce (e-commerce) and how various categories of e-commerce can be applied within the e-business model. The various categories, which are also identified as the different e-commerce models, are discussed from a theoretical approach with reference to relevant examples. Finally, the importance of e-marketing, as a tool within e-business and a new marketing technique, is discussed and the role of electronic branding within e-marketing is highlighted by means of relevant examples.

CHAPTER 3: ELECTRONIC BUSINESS

3.1 INTRODUCTION

As stated by Quick Start Technologies (Anon., 2000b), the Internet has fuelled a new economic order that places attention on the use of the electronic business (e-business) model due to the continuous real-time change that is taking place within this order. As stated by Siemens (2000c), the Internet is a tool that has played a major role in the New Economy and has brought about revolutionary effects. E-business forms a core component of this economic order and is described by Harris and Dennis (2002:17) as an approach to business in which digital and Internet technologies are integrated through the entire spectrum of business functions. As established, Information and Communication Technology (ICT) plays an important role in the New Economy, and as stated by Dearnley and Feather (2001:25), ICTs have become so commonplace in the 21st century that users tend to forget that the WWW, a groundbreaking innovation with regard to ICTs, was less than a decade old in 2000. According to Loewen (2001), the role of ICTs in business has caused much hype in the marketplace and in order to survive in the information age, organisations need to make the leveraging of the Internet in the business model a business priority.

Furthermore, the New Economy places emphasis on the New Consumer who is an individual that is increasingly demanding and needs instant access to products and services at any time and anywhere (Anon., 2000b). Moreover, this illustrates the relevance of the creation of customer proposition in this new economic order. The New Consumer functioning in the New Economy is an entity that conducts business and communicates anywhere and at any time, and is described as an individual that is *always on* due to his/her accessibility (Anon., 2002e). As stated by Stone *et al.* (2001:6), the New Consumer adopts a multi-channel approach to deal with the time pressures and other issues created by the New Economy. This author places emphasis on the fact that it is important that the New Consumer should be able to change from one device to another at any stages of the business with the organisation and/or enquiry process. In addition, it is necessary for the organisation to take a complete inventory of the touch points that the consumer has with the organisation as this will create an opportunity for improving the interface that the New Consumer has with the organisation (Anon., 2000b). Furthermore, cognisance should be taken of the fact that the New Consumer experiences a scarcity of trust, which is one issue that needs to be addressed by organisations adopting e-business by dealing with relevant issues pertaining to technical aspects such as security.

This section sets out to define and elaborate on the different types of e-business and how the different types of supply chains can be applied as business models in the New Economy. In addition, emphasis will be placed on the relevance of the Internet as an enabler of e-business. In support of the characteristics of the New Economy and the New Consumer, the relevance of a multi-channel strategy as a business and marketing approach is highlighted. Furthermore, it will be highlighted how e-marketing efforts can ensure that an organisation is unique, offer a universal service, offer the consumer the opportunity to function as a ubiquitous entity and create unison by using a seamless approach to communication.

3.2 ELECTRONIC BUSINESS (E-BUSINESS) DEFINED

Chen (1998:2) defines e-business as the conduction of business on the Internet, not only by buying or selling, but also by serving customers and collaborating with business partners. This definition is similar to the one supplied by Mesenbourg (2000:5) who describes it as "the entire chain of business activities that use the web as a backbone" thus meaning that any process that a business organisation conducts is routed over a computer-mediated network channel. Louwen (2001:12) concurs and adds terminology such as interactions and trades that are executed via the Web. In addition, the definition developed by Reedy *et al*. (2000:348) is more comprehensive than that of Loewen (2001:1) as it highlights the fact that e-business includes the activities of marketing and selling to business-to-business firms. Halberstadt (2002a) supports this definition and adds that e-business refers to software that allows for enterprise systems, customer relationship marketing and data mining. This means that seamless integration can take place over information technology infrastructure that ranges from a group of connected networks within an organisation to a network outside the organisation. Furthermore, Bührmann (2002:50) states that e-business infrastructure is the share of total economic business processes and the conducting of electronic commerce transactions. This includes hardware, software, telecommunication networks, support services and human capital used in electronic business and commerce (Mesenbourg, 2000:4). E-business infrastructure includes the physical management of the system and the collaboration of physical devices to ensure the successful processing of data. This is reiterated by Du Rand (quoted by Loewen, 2001:12) when he states that e-business "boils down to productivity, efficiency and adding value to the customer". Van Hooft and Stegwee (2001) support this opinion and state that e-business is more than just a Web shop on the Internet and can reach into every aspect of the organisation. According to King and Clift (2001) (quoted by Van Hooft & Stegwee, 2001:1) e-business is becoming more common in the marketplace and soon the "e" in e-business will be dropped and the term e-business will refer to business as usual.

The abovementioned has brought about an economic order in which organisations develop business models around the Internet being the central component. This is supported by Forsyth (1998) who is of the opinion that ICTs and specifically the Internet are central to the digital, knowledge economy. Rao (2000:53) supports the aforementioned statement and adds that the Internet has become an enormously popular tool within the New Economy that fulfils numerous functions, and due to the relevance of this tool within the New Economy, it is relevant to elaborate on the Internet as the backbone of e-business. It is also important to investigate the growth rate that this tool is currently experiencing in the New Economy. Furthermore, it is imperative to highlight the various tools that function as components within the Internet, e.g. the WWW, and how it is used within e-business.

3.3 THE INTERNET AS THE BACKBONE OF E-BUSINESS

The Internet is described by Castells (2001:1) as the fabric of human life that distributes the power of information through the entire realm of human activity. Furthermore, Castells (2001:1) adds that this medium is not only at the core of individual life, but is also the technological basis for many organisations.

The word Internet means "*network of network*" (Castells, 2001:1) and is defined by Duncan (2002:417) as a worldwide system of linked computer networks. The definition developed by Kitchen (1999:385) coincides with that of Duncan (2002:417) as it is described as a network of interlinked computers throughout the world operating on a standard protocol that allows data to be transferred between otherwise incompatible machines. According to Forrest (1999:16) and Holtz (1999), this network of computers is interconnected through common languages and protocols that are better known as Transmission Control Protocols (TCP) or Internet Protocols (IP) and these protocols allow the data to be transferred between machines, as it makes these machines compatible. In the light of the aforementioned, it should be noted that the user of the Internet varies from an individual to governments, research establishments, universities and companies (Kitchen, 1999:385).

Before it is possible to discuss the Internet as the backbone of e-business, it is necessary to elaborate on the development of this tool in the New Economy with reference to usage statistics and adoption rates.

3.3.1 The development of the Internet

The development of the Internet dates back to 1957 and the rivalry between the United States and the former USSR with the launch of the first artificial earth satellite (Kristula, 2001). McGovern (1999:190) states that the United States realised that the then Soviet Union was ahead with the development of artificial earth satellites and responded by forming the Department of Defence Advanced Research Projects Agency (DARPA) in 1958 (Castells, 2001:10). DARPA identified Paul Baran, who was commissioned to research an alternative system on how the military research network could survive after a nuclear attack. Baran completed the research project and proposed packet switching networking (Kristula, 2001). Giese (1996:126) defines packet switching as the breaking-up of information into packets with each packet containing the address of the recipient. The definition of packet switching given by Forrest (1999:16) corresponds to that of Giese (1996:126) and it emphasises that the system allows for packets of information to be sent individually and reassembled as an entity at the destination. This means that data is not centralised at one specific point and therefore this is the opposite of circuit switching, which is a system that existed prior to the packet-switching system. The process is encapsulated in the following example: in the event of A wanting to send a message to B, computers are connected with high-speed data cables. The message is sent from A via C with the address of B in packets and the message is disseminated only when it reaches B, meaning that the process developed on the basis of the security of the message has also incorporated the relevance of longevity of the information. In the words of Kristula (2001), packet switching can be summarised as "the breaking down of data into datagrams or packets that are labelled to indicate the origin and the destination of the information and the forwarding of these packets from one computer to another computer until the information arrives at its final destination computer". The process discussed above was crucial to the realisation of a computer network due to the fact that a message can be resent by the originator if packets are lost at any given point (Kristula, 2001).

The development of and progress with, research on packet switching continued and led to the creation of ARPANET, which was a computer network set up by the Advanced Research Projects Agency in 1967 (Castells, 2001:10). Consequently, the first physical manifestation of the Internet took place in September 1969, when four computers on the West Coast of the United States were connected together as part of an experiment (Holderness, 1998:5). One of the major goals of the ARPANET network was to maintain the connection of vital military and research sites in the event of a nuclear war. This was developed with national security in mind. As stated by Giese (1996:126), the communication system was geographically dispersed and non-

hierarchal, meaning that the destruction of a single computer in a network would not lead to the destruction of data. The ARPANET system went public in October 1972 where scientists demonstrated that computers could be linked together from forty different locations (Griffiths, 2001a:4). As discussed by McGovern (1999:191), this was done by using electronic mail (email) as a tool that was developed in 1972.

Developments continued and in 1974 a software package known as Transmission Control Protocol/Internet Protocol (TCP/IP) was developed by scientists from Stanford University (Zakon, 1993). According to Griffiths (2001b:5), the discovery of the TCP/IP phenomenon was a groundbreaking discovery with regard to network development as it was a gateway concept that allowed packet switching between different networks despite the differences between these systems. Griffiths (2001a:4) calls this the Galactic network due to the fact that the network functions as a system on its own within a bigger system. This phenomenon had to expand beyond the Department of Defence and this was done with the advent of USENET. As such, USENET NEWS was launched by Truscott and Ellis, two postgraduate students at Duke University in 1979 and the USENET NEWS, which was the beginning of the Internet as it is known today, was a system that functioned as a separate network that touched the ARPANET system at certain points (Griffiths, 2001a:5). Truscott and Ellis were participants in regular computer chess competitions and used the conferencing facility of the former system, the UNIX system. UNIX was a system developed by the telecommunication giant, AT&T Bell, and all Bell employees as well as universities had access to the system (Young, 1998:4). This system was installed as the basic programme on the IBMs mainframe computers in 1981 (Young, 1998:4). This system was never integrated into the Internet, as it was incompatible with the file transfer programms that were adopted. Furthermore, Truscott and Ellis met up with a Berkley graduate named Mark Horton, who made them aware of the developments in ARPANET. Horton started feeding ARPANET news items into the USENET network and by the end of 1981, the network had grown to 150 computers, which grew to 400 computers by the end of that year. Fifty messages were being transmitted daily and more than fifty newsgroups were already in existence. From this point onwards, USENET has shown significant growth and has developed into the system that is generally known as the Internet. The Internet has become a ubiquitous part of society where one of the most popular aspects of the Internet is the WWW (Young, 1998:19).

In addition, the WWW is only one of the tools within the structure of the Internet and basically refers to the realm where businesses, individuals and the government can post web pages with information, news and entertainment for the perusal of the Internet user (Young, 1998:19). As

defined by Hoffman *et al*. (2000:2), the WWW or W3 is a hypermedia environment within the Internet. It originated in the European Centre for Nuclear Research (CERN), situated in Geneva in 1989 where the developers, Tim Berners-Lee and Robert Cailiau, created an information system that was based on hypertext (Gribble, 2006). The WWW is commonly referred to as the information superhighway as coined by Al Gore, the vice-president of the USA, in 1994. This is used as a metaphor suggesting that there is travel involved in gaining information and the process is described in a similar way to a highway where everyone is driving in the same direction with the objective of finding information. For the WWW to function effectively, it requires a browser that creates a link between the web and the local computer. A browser refers to a computer program that allows a person to read hyper-linked data messages (Whiteley, 2000:167). The definition supplied by Gribble (2006) corresponds to the definition supplied by Whiteley (2000:167) as it states that the device enabling the link is called a server and responds to the enquiries made by the browser. The requested document is delivered as a web document to the computer terminal. Watson *et al*. (2002:329) are supported by Cram (2001:238) and explain that the speed at which the information is delivered is determined by the bandwidth. Bandwidth is a term used as a measure of the capacity of a communication channel and thus the number of simultaneous visits a site can handle in a given time is measured in bits per second. Watson *et al.* (2002:150) and Cram (2001:238) add that both the browser and the server are regulated by Hyper-Text Transfer Protocol (HTTP) and therefore deliver documents formatted in Hyper-Text Mark-up Language (HTML).

In 1991, the original browser developed by CERN was extended to ensure that it could be used on various platforms. The term “platform” refers to the system that designates the hardware and operating system used by the relevant computer (Rohner, 1996:114). The development of the browser developed by CERN was the start of a project that grew to fifty web servers in 1993. A groundbreaking discovery was made later that year when the first web browser called X-mosaic was created. The X-mosaic browser was developed by a 22-year-old called Marc Andreessen, which was done with the assistance of the National Centre for Supercomputing Applications (NCSA). X-mosaic is an interface that permits text, graphics, sound and video to be hyperlinked and the advantage of this browser is that it permitted the portrayal of colour and graphics (Whiteley, 2000:163). Within the next two years, there was an increase in the number of web servers, which led to 50 000 servers in 1995 (Rohner, 1996:114).

All the abovementioned developments led to the launch of the first commercial web browser in 1994 called Netscape (Whiteley, 2000:162). The fact that it was the first browser commercially

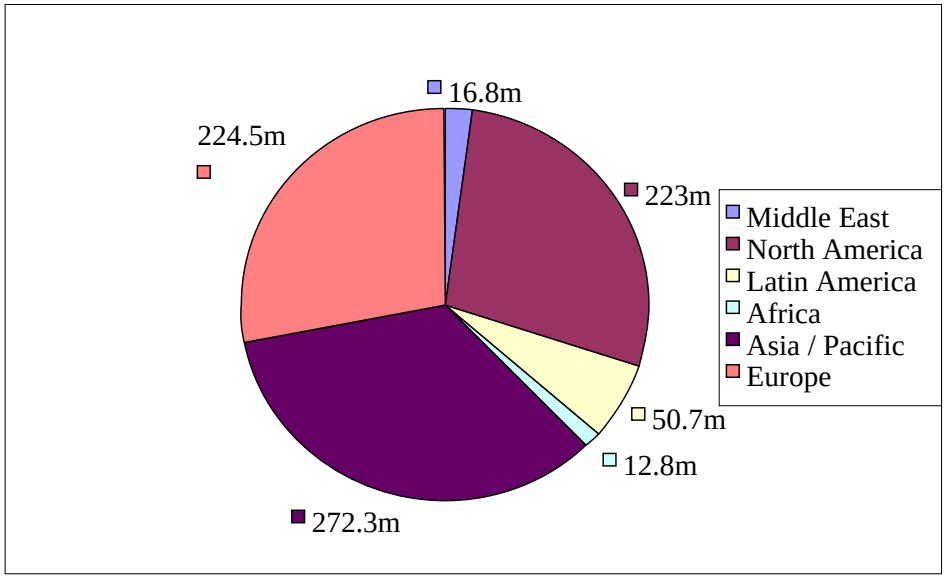
available had a significant impact on the state of the connectivity of the Internet as this enabled the individual at home or in an office to connect to the Internet and perform actions. Consequently, this had a very positive effect on the usage statistics and adoption rates of the Internet.

3.3.2 The Internet and the state of connectivity

As stated by the Nua Internet Survey, "the art of estimating how many are online throughout the world is an inexact art at best" (Anon., 2001a). Therefore, it is necessary to elaborate on the statistics and numbers at hand and attempt to establish how many are using the Internet at this point. It is crucial for the investigation into statistics and adoption rates to start on a macro-geographical level, i.e. international level, and then focus on smaller areas and countries where the Internet has had a significant impact.

According to InternetWorldStats.com, there were 817 447 147 million Internet users worldwide on 3 February 2005 and the significance of these statistics is highlighted by the fact that this medium has grown by 126% between 2000 and 2005 (Anon., 2005a). The region that has had the highest Internet user growth rate between 2000 and 2005 is Asia with a 133% growth rate in Internet usage (Anon., 2005a). As stipulated in Figure 3.3.3, the region with the second-highest Internet usage is Europe, which has shown a 124% growth rate from 2000 to 2005.

Figure 3.3.3: Global and regional Internet access breakdown (Anon., 2004e)

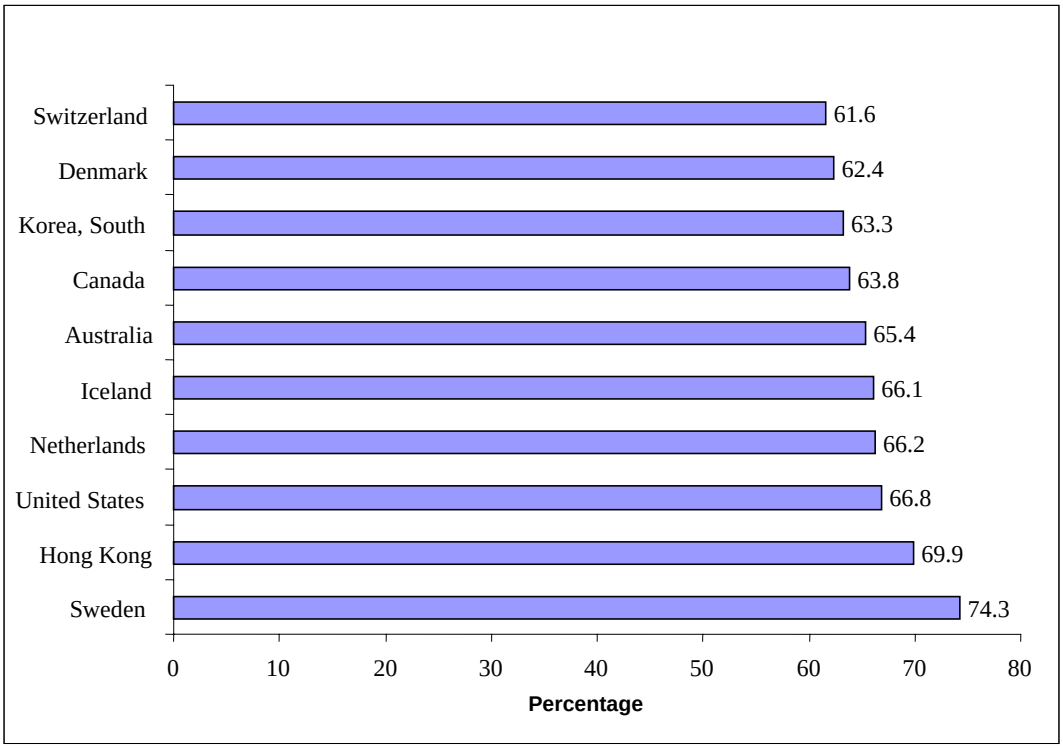


Within Europe, the European Union hosts the majority of users (26 million) whereas the rest of Europe hosts only 24 million of the total 230 923 361 users. According to InternetWorldStats. com, Germany is the country in the European Union with the highest Internet usage as of

February 2005 (Anon., 2005a). This country has shown a growth rate of 93,6% from 2000 to 2005 as 56,2% of the German population use the Internet (Anon., 2005a). Greece has the lowest percentage of Internet penetration with a mere 15% of the population using the Internet (Anon., 2005a).

As illustrated in Figure 3.3.3a, the country with the highest Internet usage numbers for 2005 is Sweden as it has a total of 6 722 553 million out of a population of 9 043 990 using the Internet, which amounts to 74% of the population being Internet users (Anon., 2005a). It is followed by Hong Kong, the United States and the Netherlands (Anon., 2005a). Similar to the aforementioned, a survey has been conducted on the top ten countries with the highest Internet penetration. This survey indicates that 65% of the populations of the top ten countries use the Internet in comparison to only 8% of the populations of countries in the rest of the world using the Internet (Anon., 2005a).

Figure 3.3.3a: Top ten countries with the highest Internet penetration rate (Anon., 2005a)



Furthermore, one country reflecting high Internet penetration rates, considering its population, is the United States. This country had an estimated population of 296 208 476 on 3 February 2005, 66% of which use the Internet, accounting for 197 895 880 users.

In addition to the aforementioned, statistics are also available on Internet usage in terms of the languages used, and English has been rated the most frequently used on the Internet with a total of 25% of all Internet users using English as the language with which they communicate and conduct business (Anon., 2005a). This amounts to over one billion people using English on the Internet, while Chinese is ranked second with 8,6% of all Internet users worldwide using it on the Internet (Anon., 2005a). Japanese is ranked third, followed by Spanish and then German (Anon., 2005a).

In comparison to the statistics discussed, Africa proves to be the region with the least Internet users as this continent has 12 937 100 users, but has shown a growth rate in Internet usage of 186,6% between 2000 and 2005 (Anon., 2005a). Although the African continent is showing a low growth rate in Internet usage, many developing countries in Africa are "getting wired", meaning that the Internet is being adopted at a more rapid rate (Anon., 2002d). This is referred to as leapfrogging, which is a term that refers to "the notion that areas which have poorly-developed technology or economic bases can move themselves forward rapidly through the adoption of modern systems without going through the intermediary steps" (Cascio, 2004). As illustrated in Figure 3.3.3, the African continent makes up just over 1% of the total world Internet population with a total of 12,8 million users (Anon., 2004e:26). Africa is currently showing a low growth rate with regard to Internet usage. However, according to a study conducted by Ipsos (Anon., 2002:iv), the Internet market in Africa experienced major growth in 2001-2002. In February 2005, Internet users on the African continent escalated to twelve million people contributing to the 186,6% growth in Internet usage from 2000-2005 (Anon., 2005a).

Furthermore, it should be noted that of the 54 Internet-connected African countries, the six most developed countries on the continent account for more than three quarters of its Internet access. These are South Africa, Egypt, Nigeria, Tunisia, Algeria and Morocco, while the remaining 48 countries account for less than a quarter of the continent's Internet access (Anon., 2004e:26). French-speaking countries in Africa generally have a higher profile than non-French speaking countries with regard to Internet connectivity, which is due to French and Canadian financial support and greater institutional connectivity, which means that more people are using the Internet in the workplace (Anon., 2002c).

In the light of the statistics discussed, it is relevant to highlight the usage of the Internet in a country such as South Africa. As stated in the E-business Report, “the true measure of digital progress however is the percentage of a nation’s population that have access to the Internet” (Anon., 2004e:27). The situation in sub-Saharan Africa became clear at the G7 conference on wealthy countries in February 2000 when President Thabo Mbeki stated that there were more telephone lines in Manhattan, New York than in the whole of sub-Saharan Africa (Anon., 2000d). The impact of this scenario becomes evident when he adds that half of humanity has never made a phone call (Anon., 2000d). According to the Goldstuck Report entitled Internet Access in South Africa 2004, growth in Internet access in South Africa would have received a kick-start in 2004 after a dramatic slowdown in the previous three years (Anon., 2003i; Anon., 2004e:26). This country currently makes up half of a percentage of the world’s total Internet population (Anon., 2004e:26). The Goldstuck report (Anon., 2004e:26) proved that the total number of South Africans with access to the Internet stood at 3,28 million people at the end of 2003 with an estimated escalation of 12% to just fewer than 3,7 million people predicted by the end of 2004. In support of the aforementioned, a study completed by World Wide Worx shows that one in thirteen South Africans had Internet access by February 2005 (Anon., 2005a). This has resulted in South Africa currently being described as the “telecommunications powerhouse” in Africa with a total of 3 523 000 Internet users of a total population of 48 051 581 people (Anon., 2005a). South Africa has also experienced an increase of 46,8% in Internet usage from 2000-2005, but only 7,5% of the South African population has access to the Internet (Anon., 2004e:26 & Anon., 2005a). While this is well above the 1,5% average of the continent, it is below the global average of 12,5% (Anon., 2004e:27). A research study conducted by BMI-Techknowledge (Anon., 2002d) and another study conducted by World Wide Worx (Anon., 2002d) indicate how difficult it is to determine how many Internet users exist as many users log on at home and in the workplace. In support of the statistics discussed, the readings recorded for AMPS on Internet usage show users logged onto the Internet at home and those logged onto the Internet in the workplace as different components and consequently many of the results may be inflated due to this occurrence (Anon., 2002d).

In view of the discussion on the Internet, it is apparent that it serves as an enabling tool in the New Economy. This statement resonates with the theory of Dutta and Srivastava (2001:63) who state that the Internet provides the infrastructure for building many new business models, and one of these business models is called electronic business.

3.4 THE E-BUSINESS MODEL

Electronic business (e-business) is a business model where the principles of business have not changed as dramatically as the way of conducting business (Power *et al.*, 2001:7). As indicated by Deise *et al*. (2001:xv), e-business notions are reshaping commerce and turning old notions upside-down, requiring a completely fresh approach. Gerstner (quoted by Barnes & Hunt, 2001:1) refers to e-business as "…all about time cycle, speed, globalisation, enhanced productivity, reaching new customers and sharing knowledge across institutions for competitive advantage". Furthermore, e-business has created an environment in which service, quality, agility and reach have increased, while price, fulfilment time and time to market have decreased (Deise *et al.*, 2001:xv). This has led to the enhancement of the ability to provide value to customers while taking a competitive lead.

Furthermore, Chen (1998:334) highlights the fact that e-business is in many instances used synonymously with e-commerce or in some instances it is used more widely to include other business activities in addition to buying or selling. Authors such as Barnes and Hunt (2001:1) and Trepper (2000) use the term interchangeably, but it should be noted that there is a distinct difference between them. As referred to by Deise *et al.* (2001:xi), "e-business is business" while by contrast, e-commerce refers to trading electronically whereby the transactions involve buying and selling products, services and information over a network (Turban *et al.* quoted by Barnes & Hunt, 2001:1). In addition, e-business is the umbrella concept under which e-commerce takes place and there are general principles that form a framework in which an e-business can find solutions to its operations. Power *et al.* (2001:15) has developed the twelve principles of e-business to describe the process and important elements involved in e-business construction. These principles are basic guidelines that can be used when building a successful e-business component of an organisation. It is necessary to follow these principles in a linear process. These principles are as follows (Power *et al.*, 2001:15):

- Learning – The first principle deals with the aspect of learning and how to tap into the information that is available. Information and Communication Technology, such as the Internet, in the New Economy, serves as a resource in the learning process. Power *et al.* (2001:17) adds that "Information is power – and there is no greater source of that power than the Internet itself." Furthermore, other learning sources include research companies, the investors, the information providers and universities. With the construction of an e-business, the learning activity is a continual process that takes place throughout the building and

maintenance of business. What becomes relevant within this principle is the application of information to the relevant construct. In support of the abovementioned, the organisation needs to obtain information on tools and strategies with regard to e-business and not only on how e-business works.

- Planning business strategy – The second principle entails the planning of an outline of what needs and wants must be attained, which involves a decision about the partners of the business (Power *et al.*, 2001:18). The fundamental issue with this principle refers to the structures around e-business development in the organisation. Smal (2001:73) states that e-business involves a significant amount of uncertainty as technology is changing at a rapid pace and planning is very relevant, but any future plans should be treated with extreme caution due to uncertainty. In addition to Smal's statement, Deise *et al.*(2001:xxvi) highlight the fact that e-business success is about organisational change management and about people working in new ways. Deise *et al.* (2001:xxvi) add that it is not only about technology as the success depends on the way in which an organisation uses technology to enhance relationships and create new ones. Furthermore, e-business requires a flexible environment in which companies can disintegrate over time, forming small nuclei that can fight for position close to the customer. The organisation must also be able to maintain physical competence and pass off non-core activities to extraprise partners who are experts in these competencies (Deise *et al*., 2001:xxvi).
- Evaluation of system software – This principle places the emphasis on the evaluation of system software and the fact that no business can operate without software. Software controls its access to its customers and to its suppliers, and their connection to its own operations. As described by Power *et al.* (2001), "software is the sales assistant, the delivery truck driver, and the warehouseman of the Internet". As indicated by Deise *et al.(*2001:xxvi), e-business employs what is referred to as disruptive technologies, which means that while it can improve and enhance the business, it can disrupt the value chain as it changes the way in which players communicate within it. It is imperative that software systems need to be reviewed properly to ascertain how it can be applied to offer more value to the consumer.
- Networking infrastructure – As software is no good without the network infrastructure that links it through the Internet to all business sectors on which it impacts, this principle deals with networking infrastructure in its different forms (Power *et al.*, 2001:20). When building the network around the e-business, it is relevant to ensure that the infrastructure can handle not only the traffic that will exist at the start, but also the traffic that a success would generate.

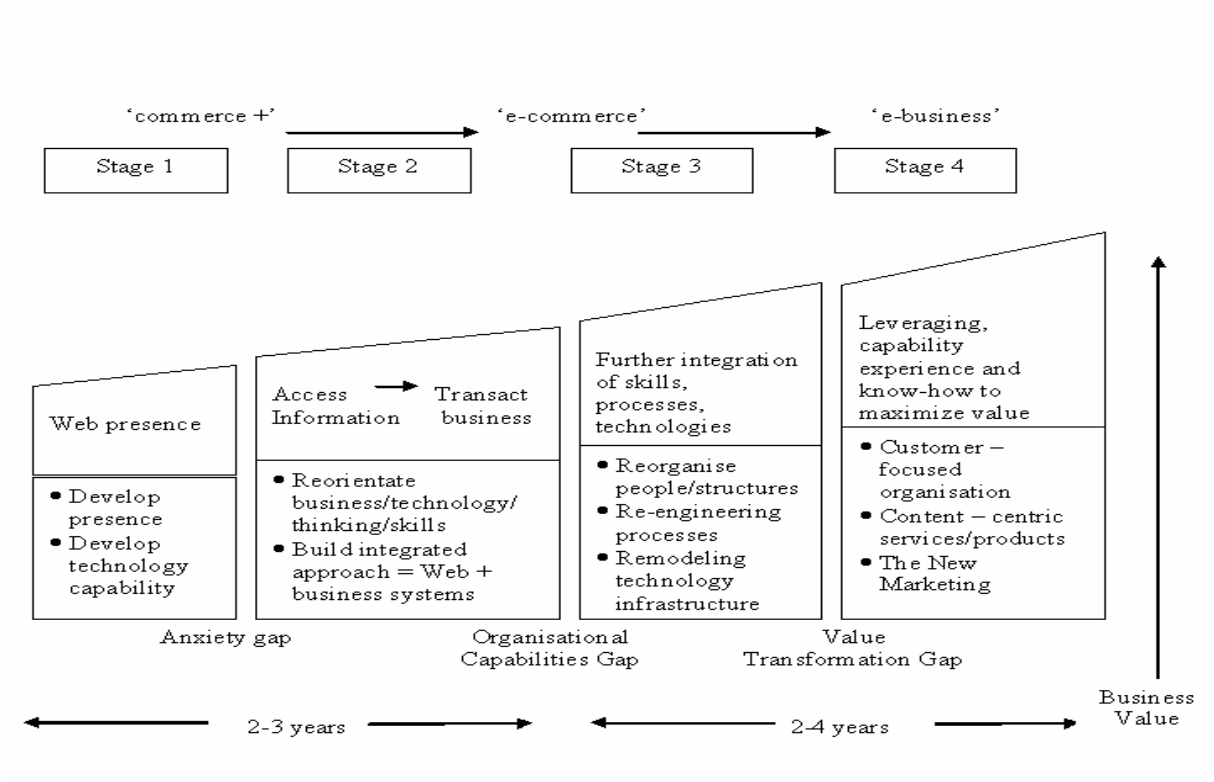
- Security – Online fraud is a major threat to any e-business. As emphasised by Power *et al.* (2001:22), the public perception is that the Internet is insecure and therefore it is crucial that transactions can be made, that business details can be transferred through cyberspace, and that orders can be logged and databases secured from unauthorised eyes.
- Payment – This principle refers to the elementary issue of payment to the business by its customers and by the business to its suppliers (Power *et al.*, 2001:22). It should be ensured that the various needs are well researched to suit the business's operational system. This is supported by Turner (2000:33) who reiterates that electronic relationships between businesses have become important, and explains that intermediaries have become extended enterprises with linked and shared business processes.
- Buying – Organisations need to ensure that all direct suppliers are linked to their websites and that activities are coordinated so that when the supplies of a product are low, new ones are automatically delivered and ordered. The business in the electronic environment must ensure that virtual shelves in virtual stores are not empty as the online shopper only sees the item that is advertised for sale and ready for delivery.
- Supplier portals – A supplier portal can be described as a site from which an organisation can buy the materials it needs in both the virtual and the real world. It is a vast marketplace where suppliers are targeted around the world for a range of manufacturers or services required, cutting supply chain costs across the board by eliminating overlap and allowing for competition among suppliers while trying to reduce shipping and administration costs (Power *et al.*, 2001:25). Diese *et al.* (2001:xxvi) support this principle and add that the set of strategies known as disintermediation, reintermediation and couterintermediation forms a core component of e-business. New intermediaries will constantly be introduced into the value-chain and others will be forced out. These strategies should be well formulated within an e-business structure of an organisation (Deise *et al.*, 2001:xxvi).
- Inventory and logistics – The e-business should use the Internet and software systems effectively to manage the inventory of the organisation. Online auctions can also be used for the disposal of obsolete or unwanted items and an example of an organisation managing a website of this kind is eBay.com. This website enables individuals and organisations to auction products off a website.
- The Internet as an ideal selling mechanism – The Internet offers a sales channel that is always available to consumers around the globe. This principle stipulates that the functionality and complexity of the website need to be managed effectively.
- Customer portals – The customer portal deals with the distribution channel through which a company sells. The brick-and-mortar has changed into a click and mortar where the

consumer surfs the cybermall. With regard to the customer distribution channel in the New Economy, the community has become a key factor in the electronic space as relationship building with customers is crucial. In support of this statement, Deise *et al.* (2001:xxvi) add that customer relationship and customer knowledge play a very important role in the New Economy. It is essential that the role of the organisation is well defined within the value chain as it must be able to find and create networks with partners who can fill knowledge gaps.

- Personalisation – Personalisation is a key concept in the New Economy and should form a central component of any e-business. According to Power *et al.* (2001:15), personalisation allows an e-business to use the demographics to send content to customers geared to what they have shown to be an interest, either through purchases made or through questionnaires that have been completed. It enables the e-business to add value to the consumer's life by offering relevant products or services at the right time and in the right place. The importance of this is highlighted as it becomes more difficult to maintain competitive advantage for long periods in the e-business world as commoditisation will place pressure on organisations upstream in the value chain and customers will continually use knowledge technology to squeeze margins from the organisations from the downstream end. As mentioned previously, commoditisation will increase its relevance in the value chain. According to Power *et al.* (2001:17) companies will continually be fighting to become "knowledge or network masters".

As established, the New Economy has been transformed by digital technology in the post industrial period and e-business can be used in the organisation for the creation of value. Value-creation has shifted from physical goods to an economy that favours service, information and intelligence as the primary sources of value creation (Rayport & Jaworski, 2001:2). Emphasis is placed on the fact that for organisations to function effectively in the New Economy, organisations need to anticipate the need for transformation and be ready to re-examine the organisation at the core (Kalakota & Robinson, 1998:8 quoted by Harris & Dennis, 2002:70). As indicated by Harris and Dennis (2002:70), organisations need to be prepared to reorganise and restructure themselves continuously. This is also acknowledged by Wilcocks and Sauer (2000:11) as these authors developed the model depicted in Figure 3.4, which consists of four stages, namely commerce, first-order e-commerce, second-order e-commerce and e-business. As illustrated in the model, an organisation needs to progress through all four stages over a period of more than four years to develop into a successful e-business.

Figure 3.4: Moving to e-business (Wilcocks & Sauer, 2000:11)



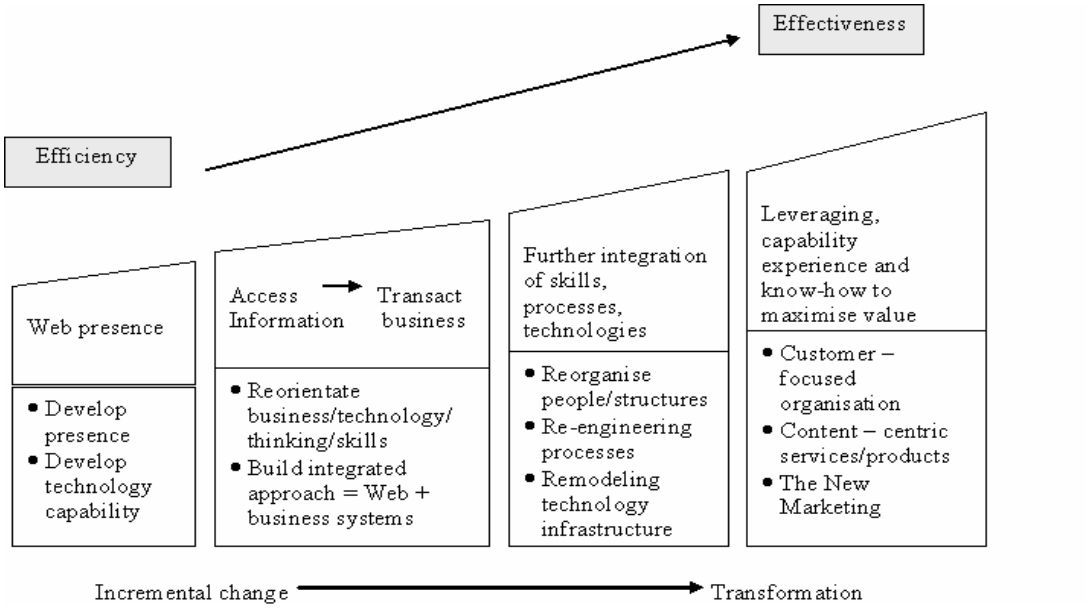
These four stages and the development within them include the following:

- The first stage is referred to as commerce and as stated by Wilcocks and Sauer (2000:10), the model proposes that the brick-and-mortar business remains relatively unchanged until it creates its own online presence. This is the first step to e-business and the opportunity for brand-building. As illustrated by Wilcocks and Sauer (2000:11), the organisation experiences an "anxiety gap" before it can proceed to the next stage, which entails questioning the validity of being online as a brand. As indicated, this stage entails incremental change and it is a stage where the organisation is characterised by efficiency (Harris & Dennis, 2002:71).
- The second stage is called first-order e-commerce and this stage is entered once the organisation realises that it can benefit from entering the e-commerce realm. This stage is usually characterised by internal communication tools such as an Intranet and the first step towards a business structure using the Internet. As indicated by Wilcocks and Sauer (2000:11), an organisational capabilities gap exists, whereby the organisation assesses the technological infrastructure, business process and capabilities required to take the next step forward. Harris and Dennis (2002:71) state that this is the stage in which the organisation starts to move from efficiency to effectiveness.

- The third stage is called second-order e-commerce and this stage involves the integration of the organisation's capabilities, procedures and systems (Wilcocks & Sauer, 2000:12). This refers to the fact that conventional paperwork is processed by means of electronic methods. This stage enables users to follow all the stages of the online buying process, from browsing and investigating to completing the transaction.
- The fourth stage is called e-business and this stage of the model indicates that the organisation optimally uses e-business infrastructure, thereby maximising the value to the stakeholders. According to Wilcocks and Sauer (2000:12), the process of moving from the third stage to the fourth stage takes two to four years to complete, and according to Harris and Dennis (2002:71), the e-business has reached effectiveness when it functions on stage four and is no longer just an efficient entity. The organisation has then also reached a state of transformation and has successfully completed a full cycle of incremental change.

Another model has been developed by Harris and Dennis (2002:71) and, as illustrated below in Figure 3.4a, it is an adaptation of the model developed by Wilcocks and Sauer (2000:11). Harris and Dennis (2002:71) have developed the model to illustrate how change management is integrated into the process of e-business and how an organisation moves from efficiency to effectiveness during the transformation period. This is similar to the model of Wilcocks and Sauer (2000:11) who also place emphasis on the shift from efficiency to effectiveness. It also indicates how incremental change is necessary during stages one and two of the e-business developmental process, and how it later only changes into the transformation of existing structures and systems.

Figure 3.4a: Moving to e-business (Harris & Dennis: 2002:71)



With regard to the models developed by Harris and Dennis (2002:71) as well as Wilcocks and Sauer (2000:11), as illustrated in Figure 3.4 and Figure 3.4a, it is important to take cognisance of the fact that e-commerce is integrated into every step after the first stage. This illustrates that e-commerce is one of the components within an e-business structure that can be used effectively to offer value to consumers in the New Economy.

3.5 ELECTRONIC COMMERCE

Electronic commerce (e-commerce) is a general concept covering any form of business transaction or information exchange executed by using ICTs (Whiteley, 2000:3). E-commerce functions within an electronic market that can be described as an inter-organisational information system that provides facilities for buyers and sellers to exchange information about price and product offerings (Been *et al.*, 1995 quoted by Whiteley, 2000:7). Keen (2002:2) defines electronic commerce as not only a single technology or tool but also a combination of technologies, applications, processes and business strategies. Schneider and Perry (2000:2) support this definition and refers to e-commerce as shopping on the WWW as a component of the Internet. Rayport and Jaworski (2001) supply a current definition of e-commerce and define it as technology-mediated exchanges between parties (individuals, organisations or both) as well as the electronically based intra- or inter-organisational activities that facilitate such exchanges. According to Esprit (quoted by Whiteley, 2000:3), electronic commerce takes place between companies, companies and customers, and companies and public administration, and it includes the electronic trading of goods, services and electronic material. As stated by Schneider and Perry (2000:5), it is also referred to as Internet commerce and, as established, this platform ensures a free market with transparency where any competitor around the globe could enter the competitive market. Halberstadt (2002a) is of the opinion that it is a model that allows the selling of products, services or information on a website, and provides a service to customers, offering customers the chance to shop for a favourite product at a time that is convenient. These transactions include purchases over the Internet, online auctions, individual share transactions, business-to-business transactions, the application of computer networks to optimise internal government activities and the delivery of government information and services.

In support of the definitions stated above, it is relevant to note that e-commerce differs from traditional brick-and-mortar businesses, and the application within e-business has many

characteristics that make an organisation functioning with an e-commerce business model unique. The characteristics of organisations applying e-commerce are as follows:

- Core strategic decisions in an e-commerce business model are technology based. As stated by Rayport and Jaworski (2001:2), e-commerce deals with the exchange of digitised information between parties and these strategic decisions relate to the virtual storefront, customer service and the look and feel of the customer experience. As established, the customer experience plays a very important role in the New Economy as the organisation needs to maximise the touch points that it has with the consumers, and the e-commerce offers opportunities to leverage these touch points. Furthermore, it is relevant that the content of the site and the decisions need to be made on the selection of service providers, common business systems and approaches to web design.
- E-commerce businesses function within an environment that requires real-time competitive responsiveness (Rayport & Jaworski, 2001:5). According to Rayport and Jaworski (2001:5), e-commerce functions in an environment characterised by "hyper competition" and this sentiment is supported by Harris and Dennis (2002:105) who state that competition between existing organisations becomes more intense as the efficiencies of the supply chain are increased and costs are saved.
- The shopfront on the Internet is open 24 hours of the day seven days a week. As already depicted, the New Consumer is a consumer that is *always on* and this business model allows for both tactical responsiveness to competitive moves and strategic responsiveness, e.g. the website as shopfront is always available to the consumer. Harris and Dennis (2002:3) concur and stipulate that this is one of the major advantages of e-commerce and the use thereof as a business model.
- The e-commerce business model differs from the brick-and-mortar business model as the customer interface is not the same. In the traditional brick-and-mortar face-to-face customer, interface takes place while e-commerce depends on "screen-to-face" interface (Rayport & Jaworski, 2001:6). As such, e-commerce is technology-enabled and transactions are processed by using the Internet as the customer interface. This links back to the research conducted by Lewis and Bridger (2001:9) who refer to the New Consumer in the New Economy as a "screenager". However, Dennis *et al.* (2004:3) state that the use of technology is less powerful than face-to-face selling as it does not offer the opportunity of selling products using an atmosphere, i.e. touch, feel and smell. This reiterates the relevance of the creation of an experience for the consumer in the New Economy, which has become very difficult to offer via a medium such as the Internet.

- E-commerce business models allow the consumer to take control of the interaction as the web employs a "self-service" model for managing commerce (Rayport & Jaworski, 2001:6). The virtual store has control over the experience offered by the organisation. However, the seller has less power in the electronic environment due to control and information flow. This refers back to the fact that the power has shifted from retailer to consumer in the New Economy.
- E-commerce business models offer the opportunity to obtain knowledge of customer behaviour due to the use of certain tools and techniques such as databases and customer relationship marketing tools. This can be used to build relationships with consumers as the modern e-business scenario has a technology-mediated relationship as a primary goal. Thus, market space is utilised to its full potential to create customer relationships and, therefore, the reiteration of the need to optimise the relationship and change it into an experience for the New Consumer.
- E-commerce business models have to focus on network economics and the effects thereof on the business. Network effects, such as Metcalfe's Law, can be described as the situation in which the value of a product or service rises as a function of how many other users are using the product (Rayport & Jaworski, 2001:7). A key characteristic of network economics is positive feedback as this may turn into "increasing returns" through the use of relevant marketing techniques such as word-of-mouth communication. Furthermore, e-commerce includes intra- and inter-organisational activities that support the exchange and incorporate all electronically based intra- and inter-organisational activities that support marketplace exchanges directly or indirectly. These include parties such as customers, suppliers, partners, competitors and markets and how they operate in managing activities, processes and systems (Rayport & Jaworski, 2001:3).

With regard to the organisation and the application of e-commerce, it should be noted that e-commerce can be divided into four distinct categories and applied within the organisational structure (Krishnamurthy, 2003). These four categories form the holistic structures in which commerce takes place and it is very important for a clear understanding to exist surrounding these categories and what each entails.

3.5.1 E-commerce categories

There are six e-commerce categories incorporating the entities of businesses, consumers and governments. These three groups interact and transact with each other on a one-to-one basis (Rayport & Jaworski, 2001:3; Krishnamurthy, 2003). In support of the aforementioned,

Gangopadhyay (2002: 131) refers to these categories as models of e-commerce. However, in comparison to Gangopadhyay (2002:131), Rayport and Jaworski (2001:222) refer to these categories as supply chains. The e-commerce categories enable the organisation to "enhance communication, collaboration and cooperation between knowledge teams using Internet technologies as well as between the organisation and members of its external constituent organisations using extranet technologies" (Gangopadhyay, 2002:132).

These categories include business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer (C2C), consumer-to-business (C2B), government-to-consumer and government-to-business e-commerce. These categories are referred to as the various e-commerce models and can be presented as follows:

- Business to business (B2B)

  The B2B model of e-commerce has been in existence for approximately 20 years, but was initially termed Electronic Data Interchange (EDI). The EDI model was the primary model that was developed and many changes have taken place within this model. Electronic Data Interchange is defined by Whiteley (2000:9) as "a set of standardised messages for the transfer of structured data between computer applications". Schneider and Perry (2000:2) support this definition and explain it as a process that occurs when one business transmits computer-readable data in a standard format to another business. Furthermore, Keen (2002:8) defines EDI as the computer-to-computer communication of business messages that use codes and formats that are agreed upon. This allows for direct and immediate input into a transaction-processing system for order entries, payments or distribution. In summary, it can be defined as the transmission of business documents between organisations via networks (Jessup & Valacich, 2003). The system is predominantly used by industries as it provides a standardised system for coding trade transactions. This enables data to be transferred directly from one computer system to another without any printed orders and invoices (Whiteley, 2000:4). EDI is most commonly applied in the execution and settlement phases of the trade cycle and an example of the EDI market can be found within the retailing industry where EDI is used for transactions between the buyer and supplier otherwise referred to as trading partners (Schneider & Perry, 2000:3). As established, EDI is known as the forefather of B2B e-commerce and with the impact of the Internet it has transformed from a document transmission system to a business tool that can be applied to both internal and external organisational processes (Jessup & Valacich, 2003).

The EDI model has since developed into a fully-fledged business tool called the business-to-business (B2B) e-commerce model. This category is based on a transaction being processed between two business entities and mainly includes purchasing and procurement, supplier management, inventory management, channel management, sales activities, payment management, and service and support (Rayport & Jaworski, 2001:3). A digital network is used to facilitate the relationship between the two entities, and products and/or services are sold via an automated integrated system (Korper & Ellis, 2000:6). In other words, it is the integration of value chains between the supplier and customer base. This model requires that company A supplies company B with the software, modem and website that enables the entity to interact without talking to a human being (Loewen, 2001:16). The link between the two companies remains a private agreement that no third party can enter into. The process involves requisitioning, where the client requests a quote. Then the purchase order is generated and payment is processed via a virtual environment. Rayport and Jaworski (2001:227) add that there are many advantages of a B2B e-commerce business model. Firstly, a B2B model will require lower costs compared to the offline management of suppliers and transactions. Secondly, it functions in real time, which means that it is characterised by improved transaction speed and control. The e-commerce is already well established and high security of the system has been well researched and guaranteed. Furthermore, the e-commerce model allows for a strong switching barrier for participating suppliers and, finally, the e-commerce model places emphasis on the capability or capacity to process the transaction volume as the buyer is the key driver behind the capacity management of the system.

- Business to consumer (B2C)

  Within the B2C e-commerce category, the consumer purchases products in a virtual marketplace (online) which, as established, is referred to as a market space. The advantage of a B2C e-commerce model is that the product can be identified, researched and compared to other offers and purchased online. Furthermore, B2C activities include sales activities, consumer search, frequently asked questions, and service and support. The categories permit trade online and enable the consumers to save money and time, and compare prices and product features in the comfort of their home or office. Examples of well-known international B2C e-commerce websites are Yahoo.com, Amazon.com and Schwab.com, and sites that receive a great deal of attention in South Africa include McCarthy.com, Standard Bank.co.za, Amazon.com, eToys, Exclusivebooks.com, Merill Lynch and Woolworths with the hosting of inthebag.co.za (Hoque, 2000:39; Halberstadt, 2002b).

In the current B2C market, there are four primary supply chain models namely (Rayport & Jaworski, 2001:225):

1. The first model is called Stock-it-Yourself and involves the maintenance of an integrated warehouse that can handle shipments to store and shipments to web customers. This model involves an automated warehouse that can directly fulfil online orders.
2. The second model is called Outsource Warehousing and involves the use of logistics specialists to stockpile and ship web orders. This entails the sending of orders directly to a warehouse where orders are packaged and shipped to customers.
3. Drop Shipping is the next model within the B2C category, which requires e-commerce companies to depend on their manufacturers or distributors to pack and ship their retail web orders.
4. The last model is called Fulfilment Intermediaries and refers to a model where intermediaries take care of all back-office operations for e-commerce companies. The intermediary would handle order processing, direct orders to suppliers, keep customers updated on their progress and handle cancellations or returns.

- Consumer to consumer (C2C)

  The consumer-to-consumer (C2C) e-commerce category can be compared to the classified section of a newspaper. This is a virtual environment that creates a platform where one consumer can purchase products from another consumer online. An example of this model is Kazaa.com, where peer-to-peer technology allows teenagers to download music files off the Internet, free of charge. The exchanges may or may not include third-party involvement (Rayport & Jaworski, 2001:4).

- Consumer to business (C2B)

  The C2B e-commerce model takes place in a cyber environment and allows for consumers to communicate with the business. The business then puts the person in contact with all the relevant market players. An example of a business that functions on a similar process is that of icanonline.co.za or bidorbuy.co.za and eBay.com where consumers may pool together and gain more power when negotiating on a price for a deal and thus gain more power in the market (Anon., 2000a).

- Government to business

  The government-to-business e-commerce category places emphasis on e-procurement. This model is based on the supply of products and services from the government to various industries. This e-commerce model is found in many government structures as it deals with

the general business processes and forms an integral part in simplifying the logistical processes in various governments.

- Government to consumer

  The government-to-consumer model focuses on the delivery of services and programmes provided by the government to the consumer. It is referred to as "government online" and includes for example the City of Johannesburg City Council e-services delivered on the website. This includes the requisition of service as well as the payment of services or products. Examples of these include the payment of an account, such as water and lights, online.

According to the categorisation of e-commerce categories by Turban *et al*. (2000:11), there are two additional categories within the realm of e-commerce. The first category is called non-business e-commerce and refers to non-business institutions such as academic institutions, religious organisations and/or government agencies that are using e-commerce to reduce their expenses. Singh and Sook (s.a.) highlight the relevance of the e-commerce component in non-business institutions such as universities, as this e-commerce model may be used to improve operations or customer service (Turban *et al.*, 2000:11). An example of the non-business e-commerce website and service would be that of the University of South Africa (UNISA) online registration that is hosted via the unisa.ac.za website. The second category is referred to as intrabusiness or organisational e-commerce, and this model includes all internal organisational activities, usually performed on intranets that involve the exchange of goods, services or information. These activities can include online training, the selling of corporate products to employees and/or cost-reduction activities (Turban *et al*., 2000:11). An example is found on the University of Johannesburg Intranet section of the website where the user can locate and exchange information. Consequently, this process leads to cost reduction, which is one of the elements highlighted by Turban *et al*. (2000:11).

In support of the abovementioned, a business model using e-commerce as its basis in the business processes can create a consultative process that offers commercial growth and has an impact on society. According to Cram (2001:3), the United States, the Scandinavian countries, the United Kingdom, Singapore and Canada rank among the most-developed countries with regard to e-commerce.

3.5.2 The state of e-commerce in terms of statistics and usage

Forrester Research, a company focusing on Internet forecasts, proves that business-to-business e-commerce exceeded business-to-consumer e-commerce in 2000. However, the B2B market has remained strong and according to Forrester Research, this escalated from $433 billion in 2000 to $6,01 trillion in 2004 (Anon., 2005b). The total worldwide B2B e-commerce market was worth $8,5 trillion in 2005 (Anon., 2005b). The statistics discussed above are supported by Keenan Vision (Anon., 2005b) and this consultant's research showed that B2B transactions amount for the majority of total Internet sales. The use and number of transactions are escalating as 740 billion B2B transactions were conducted from a total of 900 billion total web sales in 2003. This escalated to 1 100 billion sales, of which 1 400 billion sales were B2B transactions processed in 2004 (Anon., 2005b). Similarly, business-to-consumer e-commerce sites are also a very strong market, but it is important to take cognisance of the fact that 75% of all B2C e-commerce is generated by five websites (Anon., 2004g). These websites are Amazon.com, Buy.com, eBay, Yahoo and America Online (Krishnamurthy, 2003). The number one e-commerce site in 2004 was eBay with 5,4 million visitors, and Amazon.com ranked second with 2,6 million visitors (Anon., 2004g).

With reference to the e-commerce industry growth specifically within a South African context, it is important to note that growth has taken place (Brewer, 2001:21). Furthermore, this is reiterated by a report published by Arthur Goldstuck that shows that online retail business in South Africa was already worth R80 million in 2002 (Anon., 2002). South Africa has experienced growth in e-commerce from 2002 despite the slow-down in the growth of online retail where the number of retail websites increased from 215 at the end of 2001 to at least 719 at the end of 2003 (Anon., 2004f). According to the Goldstuck Report: Online Retail in South Africa 2004, the South African market is dominated by the top eight online retailers who between them account for 80% of all online retail sales in the country. The dominant online retailers are Pick 'n Pay Home Shopping, Kalahari.net, Woolworths inthebag, Netflorist, Cybercellar and Streetcar.com (Anon., 2004f). The dominant online shopping mall is MWEB ShopZone followed by Digital Mall (Anon., 2004f).

In South Africa, e-commerce is used by online-only companies such as bidorbuy.co.za, Icanonline.co.za and Amazon.com, known as click and mortars and offline companies like Pick 'n Pay and Ster-Kinekor known as brick and mortars (Duncan, 2002:429). Local companies have accepted that this business model reduces the cost of running a traditional business. In comparison, Goldstuck (quoted by Blain, 1999:28) is of the opinion that the real growth is

happening in the business-to-consumer market. This includes both window-shopping online and the actual purchase. From the aforementioned, it is evident that e-commerce forms an integral part of e-business as this model functions as a business model between two different groups or individuals, and it is relevant to place emphasis on the marketing function that exists within this business model.

3.6 E-MARKETING AS A COMPONENT OF E-BUSINESS

According to George Wiedemann, the chairperson of the US Direct Marketing Association Board, the Internet is the single most important development for marketers since the US Postal Service (Newell, 2000:91). This ICT tool has had the greatest impact on business and the way in which businesses market themselves. Therefore, companies functioning within the New Economy have realised that the Darwinian principle of survival of the fittest is one of the most important rules in the business domain (Schwartz, 1999:1). Consequently, many companies have learnt that it is imperative to keep up with trends and have implemented what is called digital marketing.

The term digital marketing is an all-encompassing term that includes a subsection such as e-marketing, also called digital marketing. The word digital refers to the representation of data by the bits and bytes of binary code and is thus the opposite of cassette tapes and vinyl records as these mediums carry analogue media. Furthermore, digital marketing refers to any promotional message that is sent out via a medium that uses digital technology. E-marketing is defined by Halberstadt (2002a) as the delivery of marketing communication messages across a wired connection, like the Internet, at the request of the recipient. This marketing model requires that the company interacts with the recipient over time to develop customised one-to-one relationships (Halberstadt, 2002a). E-marketing, also referred to as online marketing, is based on the same principles as the traditional marketing model where a message is sent via a marketer to a consumer or potential consumer who then responds to it or dismisses it. In contrast with traditional marketing, the e-marketing model requires that the individual initiates contact with the marketer. Similarly, Reedy *et al*. (2000:4) define e-marketing as all the online or electronic-based activities that facilitate manufacturing goods and services by the producer to satisfy the consumer's wants and needs. In addition, Rohner (1996:29) adds that if a marketer is to stay ahead in this new economy, the focus needs to shift to interaction with consumers, which will enable the marketer to gain a real understanding of the consumer's needs.

In support of the abovementioned, Harris and Dennis (2002:191) state that recent technological developments mean that the choice for businesses is no longer online versus offline. These authors add that organisations need to approach the e-marketing function as a multi-channel strategy that allows customers to access online content from a range of devices (Harris & Dennis, 2002:207). As stated by Lindgren *et al.* (2002:139), value creation is tied to technical evolution and it is now created by using a variety of media to communicate a marketing message to the New Consumer. According to a report compiled by Park Associates (Anon., 2003j), consumers will increasingly look forward to multimedia networking solutions to compensate for the time constraints that are experienced in their life. As established, the New Consumer has to deal with time pressures in the New Economy and as stipulated in the Park Associates report (Anon., 2003j), the marketer needs to take the time pressures and constraints of the New Consumer into consideration when developing a marketing campaign for an e-business and ensure that the convergence of technology is reinforced. This is supported by Harris and Dennis (2002:232) who state that "the process of integrating the communication tools is vital". According to Quick Start Technologies (Anon., 2000b), convergence is going to require that the various systems communicate with each other seamlessly due to the fact that the New Consumer has become a device-agnostic individual, which means that the consumer is comfortable with using various devices that can be seamlessly integrated, i.e. achieving unison. Furthermore, Watson *et al*. (2002:334) state that the required information is available, irrespective of the device and location as only a single interface or connection point is used. This is further supported by another statement from Quick Start Technologies (2000b) that stipulates that the organisation needs to do an audit and complete an inventory of the ways in which a consumer interfaces with the organisation as this will provide the organisation with a basis for evaluating the value that consumers place on each touch point. This should consequently offer the opportunity to improve certain touch points and create new contact points that may not currently be in place.

One of the most important issues within e-marketing is Permission Marketing, and as stated by Rosenspan (2001:54), Permission Marketing is a term that has been popularised by Godin (1999a) as the vice-president of direct marketing for Yahoo. This is supported by Tezinde (2002:29) who adds that Godin (1999a) has popularised the concept of opt-in email suggesting that organisations should use Permission Marketing, meaning that permission should be obtained from the consumer to receive customised advertising messages. Permission Marketing is defined as promotional email to recipients who consent to receive commercial messages from the sender,

typically by signing up on the organisation's website (Tezinde *et al*., 2002:30). Moreover, Permission Marketing is based on three main principles (Rosenspan, 2001:54):

1. The consumer, or recipient, controls the process.
2. The consumer agrees to receive communications.
3. The consumer consciously signs up or opts-in to receive customised advertising messages.

As stated in the aforementioned statement, permission relationship starts with the consumer's explicit and active consent to receive commercial messages, and creates the opportunity for the consumer to stop receiving this message at any time as Permission Marketing offers the consumer the opportunity to volunteer to be marketed to (Godin, 1999a:43). Permission Marketing is an approach that proves to offer many advantages within an effort because it is described as the art of marketing to people who want to be marketed to, and doing it with anticipated, personal and relevant messages (Godin, 1999b). Similarly, Krishnamurthy (2001:1) supplies a definition that is similar to the above and states that Permission Marketing is based on a one-to-one interaction model where the consumers give the marketer the permission to share their personal information with others or send them certain types of promotional messages, meaning that the idea of the marketing model is to understand the customer's lifetime value and allocate resources in accordance with these values. This kind of marketing is categorised as an extension of direct marketing or relationship marketing where permission is seen as a tool to privacy rights and not targeting. Furthermore, Permission Marketing is anticipated, personal and relevant, and emphasises the retention of customers rather than obtaining new ones (McGahan & Ghemawat quoted by Krishnamurthy, 2001:2).

Permission Marketing is applied mainly in the use of ICTs, specifically the Internet and electronic mail (email), and there are mainly two reasons for using these mediums. The Internet offers marketer-to-consumer communication at a low cost (Hoffman & Novak, 1996; Shiman in Kishnamurthy, 2001:4) and it enables rapid feedback mechanisms as this medium is based on instantaneous two-way communication (Hoffman & Novak quoted by Krishnamurthy, 2003:4). Although the customer mainly controls the terms of the relationship that exists between the marketer and customer, Permission Marketing encourages consumers to participate in long-term, interactive marketing campaigns.

There are five steps in the Permission Marketing approach that ensure the success of the marketing effort. Firstly, the customer must be offered an incentive for volunteering. This may

vary from entertainment to information or a form of payment. As stated by Godin (1999b:46), the consumer has opted-in to communicate when approached through a Permission Marketing campaign, and the incentive for the prospect's attention must be overt and clearly delivered. Secondly, this approach offers the customer information about the product or service over time and the message is customised to the needs of the specific customer, meaning that a specific, focused message is delivered, as time is the most powerful element of this marketing approach (Godin, 1999b:47). This is supported by Rosenspan (2001:55) who states that the organisation should limit the information that is sent to the consumer to what the individual has agreed to receive and ensure that what is sent will build a trusting relationship. As established, a time constraint is one of the major problems of the New Consumer in the New Economy. From the aforementioned, it is evident that Permission Marketing can contribute to the elimination of this problem in the New Consumer's life. The third step of this approach entails the reinforcement of the incentive (Godin, 1999b:47). A powerful message has been delivered with the permission of the customer and the consumer's attention needs to be retained. Due to the fact that a two-way dialogue has been created, the marketer can adjust and customise the incentive to the needs of the prospect (Godin, 1999b:47). This is an introductory step to the next step, which entails that the potential customer increases the level of permission granted to the marketer and the marketer can obtain more data about the customer, i.e. personal life, hobbies or interest, and may now even introduce new categories of products or market extensions to the customer. Furthermore, this step forms the basis of how permission is changed into profits. The fifth and final step requires the marketer to leverage the permission given and attempt to change consumer behaviour towards profits over time (Godin, 1999b:48). Although this is the last step in the process, it is a continuous process that develops over time.

The process discussed above takes place via email. According to Krishnamurthy (2003:223), there are different types of permission within the Permission Marketing model, which includes the opt-out, opt-in and double or confirmed opt-in. As highlighted by Krishnamurthy (2003:223), there is more than one type of opt-in model within Permission Marketing:

- Opt-out

  This model is based on the fact that an email is sent to the consumers whereby s/he has the choice of indicating that no further mail should be sent to them. The email contains a statement whereby the consumer can indicate that no interest exists.

- Opt-in

  This model is based on the fact that the consumer tells the organisation explicitly that it has permission to send more messages. This is identified by Godin (2001) as the permission stage and it is identified as one of the first steps within the Permission Marketing approach. Similarly, Lewis and Bridger (2001:69) emphasise the fact that marketers focus on changing strangers into prospects who choose to opt-in to a series of communication as it is easier to teach the consumer about a product or service when that prospect has agreed to pay attention. In view of this statement, there are four models that can be used to create an opt-in-based approach. The first opt-in model is called direct relationship maintenance where consumers can sign in to receive communication and emails from a specific organisation. The second model is described as a permission partnership and requires the consumers to provide the media site or portal with permission to send them promotional messages. After this, the intermediary alerts its partners who might be interested in sending out similar messages. The third model can be described as an advertisement model and is based on a structure where the consumers provide detailed information about their preferences and interests to an infomediary, and this information is then used to identify advertisers. The advertisements supplied are then matched to the consumer's interests. The last model is referred to as a permission pool and is a system where different firms with permission send customers promotional messages. These organisations pool the information provided by the customer, and promotional messages are sent out, targeting this larger pool.
- There is a double or confirmed opt-in model that has one essential problem, which is that one customer can sign up for another customer. This means that another customer receives e-mail containing information that s/he might not be interested in at all. Emphasis should be placed on the relevance within this model to build in steps to overcome this problem, and marketers need to send confirmation emails to all the individuals who have opted-in. Furthermore, the individual needs to complete the loop by confirming that s/he wants to be on the email list.

In support of the aforementioned, Godin (1999b) has developed new Ps of marketing which can be applied to the practice of e-marketing and need to be taken into account when creating touch points with the consumer. This was done due to the fact that the old mix, namely product, price, place and promotion, is no longer as effective as it was in the past.

The new Ps of marketing as developed by Godin (2001) are permission, paradigm, pass-along (really the idea virus', but this does not start with a 'p') and lastly, practice. These four Ps alter

the way in which products and services are marketed via information technology, especially email.

These four Ps of Permission Marketing entail the following (Godin, 2001):

- Permission refers to the fact that the marketer needs to obtain permission from the consumer to send marketing messages to the individual.
- Paradigm refers to the practice of breaking the rules of industries and inventing new rules in the process. These rules are developed with the aim of making competition obsolete.
- Pass-along (the 'idea virus') entails the fact that the single best way of growing a business is helping customers tell other people about the product or service. This is based on recognition and the message needs to spread like a virus. This is in support of the viral marketing concept, which is defined by Krishnamurthy (2003:158) as any strategy that encourages people to pass on a marketing message to others with the potential for exponential growth in the message's exposure and influence. Krishnamurthy (2003:158) is supported by Harris and Dennis (2002:335) who define viral marketing as an online promotional activity that spreads itself like a virus, i.e. rapidly and effectively. This statement is also supported by Rayport and Jaworski (2001:175) who state that it takes advantage of the network effects of the Internet to spread messages widely by customer endorsement and is consequently also referred to as 'word of mouse'.
- Practice refers to the idea that by testing, measuring and evolving the product offering, an organisation can develop and change ahead of the competition.

3.6.1 Trends in e-marketing

In support of the aforementioned discussion on e-marketing, Lindgren *et al.* (2002:139) have highlighted a number of trends that are crucial for e-marketing success. These trends include the following:

- As stated by Lindgren *et al*. (2002:140), the brand and its values play an important role in e-marketing or otherwise referred to as the new marketing logic within the New Economy. One concept that becomes very relevant within the e-marketing context is electronic branding (e-branding). Bechtold (in Gertsman and Meyers, 2001) defines e-branding as the application of branding principles to projecting a brand image of an e-retailer. It is when a brand's identity and equity are extended onto the Internet or through electronic media. The author adds that it is imperative that physical and digital assets are synergised in such a way that the brand is

consistent online and offline, and consumers are not confused, but see the brand as one holistic brand. This corresponds with the definition of branding formulated by Interbrand Sampson as "... a totally holistic experience, in which all activities must be aligned and integrated to gain maximum competitive advantage" (Anon., 2004g). This reflects the fact that e-branding and traditional branding principles are very similar (Fazarinc in Gertsman & Meyers, 2001:8). As stated by Fazarinc (in Gertsman & Meyers, 2001:8), many of the timeless principles of branding do not change, but what has changed is an extended dimension of communication vehicles and avenues, an extended dimension of distribution and company or customer contact capabilities. Furthermore, e-marketing is one of the extended dimensions of communication vehicles that offer the organisation and marketer a very useful tool for the process of branding. E-branding creates the opportunity to develop a strong brand while communicating the value offering to the consumer. This refers to the fourth P of Permission Marketing as introduced by Godin (2001), as e-branding is seen as the next step in branding with regard to the development thereof, and can add value to the product offering.

- The attitude of the brand is increasingly important as New Consumers like to play with identities and lifestyles associated with brands (Lindgren *et al*., 2002:140). It is vital that brands have an attitude that portrays the values and character of the specific brand.
- Another trend is the rising cost of gaining new consumers. Traditional advertising communication is based on the idea of interrupting human activity for long enough to catch people's attention. The new marketing logic is based on interactivity and the possibility of creating dialogue with the consumer. This sentiment is supported by Dennis *et al*. (2004:103) who stipulate that successful e-commerce brands have integrated customer relationships as a core component of the business model.
- Marketing communication is moving towards total brand integration, which means that a total brand experience is offered at every point of contact. It should be noted that the second P of Permission Marketing (Godin (2001), called paradigm, becomes relevant in this process as it stipulates that the organisation needs to change a paradigm, break rules in the industry and construct new rules in the process if an organisation creates a new brand experience or develops a new touch point for the consumer. This resonates with the statements of Pine and Gilmore (1999:2) as well as Schmitt (2000:25) who emphasise the relevance of offering the consumer an experience. This focus on the offering of an experience can be seen as changing the organisation's existing paradigm because new rules and demands are developing for organisations functioning in the New Economy.

- Micro-geographical marketing is developing as another phenomenon and is also noted within e-marketing. Micro-geographical marketing refers to the fact that channels are not dependent on time or space, but these channels accompany the individual customer wherever s/he goes. This technique offers personalised communication based on needs that are location sensitive (Watson *et al.*, 2002:333). Resultantly, this is also called location-based commerce (l-commerce). Coca-cola is currently using l-commerce as part of the marketing strategy in the United States. Coca-cola has joined forces with the go2systems.com website where the owner of a mobile device, i.e. mobile phone, can visit go2systems.com to obtain a display of relevant information and directions to the nearest Coca-cola outlet (Watson *et al.*, 2002:334).
- In support of the abovementioned, Rosenspan (2001:54) has conducted research on Permission Marketing and developed a concept that is the next step in the process of evolution with regard to this theory. Rosenspan (2001:56) is of the opinion that Permission Marketing is only the beginning of a true interactive marketing system and calls the next step Participation Marketing. It is defined as the process in which consumers not only agree to be marketed to, but also become involved in creating their own product and service offerings (Rosenspan, 2001:56). During this process, customers create their own contact strategies with organisations, i.e. by registering on a grocery supplier's website where a never run out or replenishment service is chosen by the consumer. In this event, items such as bread and milk would automatically be ordered and delivered to the consumer on a regular basis, as this request has been submitted by the consumer.

3.7 CONCLUSION

The Internet, as the backbone of e-business, is a tool that has experienced significant growth, but has not yet developed into a medium that has reached its full potential, especially in the developing world. However, this medium functions as a well-developed business tool serving the New Consumer in the New Economy, and solves many problems and issues related to this new economic order. The Internet, and specifically e-business, supports a dynamic and constant-changing business environment that requires the most sophisticated and modern technology, and the relevance of the aforementioned is emphasised by the fact that this economy deals with the management of ideas, information and relationships. Furthermore, these three attributes produce a new type of marketplace, referred to as a market space, and a society that is rooted in ubiquitous electronic networks. In view of this, the relevance of e-business becomes apparent when the relevance of organisations and the functions that takes place within them are studied within the framework of the New Economy. E-business allows for the customisation and more

increased management of information that leads to the better offering of a customer proposition. E-business and e-commerce as a subsection within it is in a state of constant transition, and the application and utilisation of these tools within the organisation should be a business priority as it can provide major opportunities for the organisation in the New Economy. Mobile business (m-business) as the successor of e-business is another tool that can be utilised and applied within organisational processes to offer value-added product offerings to strengthen the consumer proposition. M-business refers to the purchasing of information, goods or services using a wireless device (Anon., 2000c). As reiterated by Shi (2004:18), in order for the utilisation of these tools to grow, technical issues such as security and usability standardisation and device limitations must be addressed, as they could influence the consumer adoption. In view of this, postulations made in the MeT White Paper on mobile transactions (Anon., 2003l:12) state that the ease-of-use of these tools affects consumer adoption whereas the implementation thereof in a business context is significantly influenced by the cost factor.

The discussion that follows deals with the development of mobile business as a dynamic and evolving business and communication tool in the New Economy. The emphasis in the discussion will be placed on the characteristics of mobile business and how this business model and tool are used to create unique customer contact points where value is delivered and customer proposition is strengthened. The different models of mobile business will be discussed with the emphasis on the different approaches and opinions that exist with regard to the various models.

CHAPTER 4: MOBILE BUSINESS IN THE NEW ECONOMY

4.1 INTRODUCTION

Ding and Unnithan (2005:57) explain that a revolutionary technological breakthrough is currently taking place within the structure of a new economic order, also referred to as the New Economy. Within this New Economy, wireless communication is likely to have a profound impact on the life of consumers, also referred to as New Consumers, functioning within this economy. Ding and Unnithan (2005:57) add that the growing momentum of the wireless revolution has made mobile devices a critical component of the lives of New Consumers in the New Economy. In support of this postulation, Karvonen and Warsta (2004:171) argue that mobile technology and mobility in particular have brought about major changes and open up many opportunities to make consumers' lives easier. Kumar and Zahn (2002) concur and state there has been a global telecommunication revolution where the confluence of technological, economic and social forces has led to rapid changes in the capabilities, price and performance of telecommunication services. In view of these changes taking place, Ayadi (s.a.) emphasises that organisations should utilise m-business opportunities and not simply treat them as an extension of the traditional web, as this could result in missing out on unique differentiated qualities for value-added possibilities in the New Economy.

Furthermore, the mobile technological revolution that has taken place has brought about an environment in which mobile communication also offers a solution for countries with poorly developed technology, as it can be used to move themselves forward through the adoption of modern systems without going through the intermediary phases. Cascio (2004) refers to this occurrence as leapfrogging, which is also cited by specialists such as Stephan Nolan, the general manager for Motorola South Africa, who is of the opinion that the future of Africa is wireless communication. Moreover, the concept of leapfrogging is supported by a study conducted by the Accenture Institute for Strategic Change (Anon., 2000e), which forecasts that wireless communication will experience global growth due to the fact that many developing countries are adopting this type of communication in the leapfrogging process. In the light of this, Nolan (2003:64) states that "wireless systems are now being seen as one of the most important means of communication and since the rollout of the first cellular mobile network operator in South Africa in 1994, Africa has seen explosive growth in the use of mobile phones, with this device now being an indispensable tool for communication, business and trade on the continent".

In view of the wireless revolution and the concept of leapfrogging, Athey (2001) notes that there is potential for strong returns when businesses invest in wireless communication to deliver m-business solutions, as this can contribute to the lower cost and enhancement of productivity. Athey (2001) adds that the m-business solution enables companies to unlock the real value of wireless communication by delivering just the right information to just the right people at just the right time. This offers a customer proposition based on value as real time information is accessible by the consumer irrelevant of the time zone or the place within which the person functions. Furthermore, a report compiled by Siemens (Anon., 2000c) emphasises that m-business, meaning the purchasing of information, goods and services via a mobile device, is likely to have a far greater impact on the economy than business that is conducted on a wired connection using a stationary device such as a personal computer, which is also referred to as e-business.

What follows is an illustration of how m-business, which is enabled by wireless communication, functions as a business model in the New Economy. The term m-business will be defined, followed by a discussion on the state of wireless communication as an enabler of m-business. Furthermore, the various m-business models will be discussed critically, which will be followed by an overview of the enabling technologies involved within the delivery of m-business. Thereafter, the focus will shift to the characteristics of m-business with the emphasis on the role that certain elements such as the value chain, partnerships and Mobile Permission Marketing play in m-business.

4.2 M-BUSINESS DEFINED

As postulated by Mylonopoulos and Doukidis (2005:5), various authors have developed definitions of m-business that do not encapsulate the growth of the application and/or the impact thereof in the New Economy. However, Mylonopoulos and Doukidis (2005:5) note that the majority of these definitions acknowledge that m-business has brought about a shift in the information and telecommunication technologies arenas from the basic delivery of communication services to the delivery of information and entertainment services. M-business is an all-encompassing term that refers to the purchasing of information, goods or services via a mobile device (Anon., 2000c). The key element of purchasing information, goods and services via a mobile device is also emphasised by Leung and Antypas (quoted by Kumar & Zahn, 2002) as well as Duncan (2002:417) as these authors explain that m-business is based on wireless communication that refers to purchasing and content delivery on mobile devices. However,

O'Loughlin (quoted by Leem *et al*., 2004:79) emphasises another key element of the definition and explains that m-business encompasses more than just communication as it includes services and/or applications such as personal communication, infotainment, m-commerce, business application and remote control. Guissani (2001:193) agrees and further highlights this element by explaining that m-business offers convenient, personalised and location-based services to customers, employees and partners when these individuals utilise wireless communication. In addition to all the key elements highlighted, Junglas (2002:7) emphasises that m-business has the added advantage of being used in a private network of for example an organisation and further defines it as the use of wireless technology for communication and transactions between an organisation and its various stakeholders to improve organisational performance with stakeholders, including customers, suppliers, governments, financial institutions, managers, employees and the public at large. In summation, the definition of m-business is encapsulated in the following key attributes:

- Purchasing information, goods and services using a wireless device.
- Using text and data via a wireless connection.
- Personalised services.
- Location-based services.

Junglas (2002:7) adds that there are irregularities with regard to the reference of the term m-business. This becomes apparent when authors such as Guissani (2001:193), Huber (2001:48) and Mylonpoulos and Doukidis (2005:5) use the terms m-business and mobile commerce (m-commerce) interchangeably. Resultantly, Junglas (2002:7) states that "…mobile business and mobile commerce are well used terms within business literature, there is none – or almost none – appropriate or satisfying definition for either one". Moreover, Junglas (2002:7) concurs that vast amounts of terminology are used synonymously and these include terms such as mobile electronic commerce, wireless electronic commerce or simply wireless. These terms are not identical as m-business does not only encompass transactions processed via a wireless device, but also a variety of mobile services rendered over a mobile handheld device (Anon., 2000c). Furthermore, the terms wireless and mobile are commonly used as synonymous terms but as indicated by Molta (2001), mobility does not always equal wireless, and wireless does not always equal mobility. The difference is that many mobile solutions do not require wireless access to serve the intended purpose effectively while wireless devices are automatically mobile.

Mylonopoulos and Doukidis (2005:5) explain that m-business takes place in an environment and these authors have developed a theory with regard to m-business and the environment in which it takes place. Furthermore, Mylonopoulos and Doukidis (2005:5) add that the concept of m-business is taking place in an ecosystem of individuals and business actors in specific contexts that involve the creation of experiences with the use of mobile technologies. It is necessary to elaborate on the m-business ecosystem and illustrate the four levels of the ecosystem and the functioning of every level with its involved stakeholders.

4.3 M-BUSINESS ECOSYSTEM

The definition of the m-business ecosystem explains it as an ecosystem of individuals and business actors, in given historical socioeconomic contexts, engaging in multiple successive technological frames through a learning process of co-creating new experiences of social interaction with the use of wireless and mobile technologies (Mylonopoulos & Doukidis, 2005:5). This definition is also supported by Leem *et al*. (2004:80) as well as Figge *et al*. (2002) who state that m-business is positioned in a business ecosystem consisting of mobile telecommunication companies, content providers, mobile solution providers and consumers. The concept of an m-business ecosystem emphasises the evolutionary character of m-business, acknowledging the multiplicity of involved stakeholders and gives precedence to the social interactions between them as the constitutive force of m-business (Mylonopoulos & Doukidis, 2005:5). Furthermore, m-business constantly negotiates the outcomes of a complex web of interactions whereby some services are endured and others declined as it is referred to as an ecosystem that manifests on four different levels, which includes the individual, the organisation, the industry and the society (Mylonpoulos & Doukidis, 2005:5):

1. The individual

   The individual experiences constant adaptation in order to accommodate new technologies and services and is constantly in contact with other individuals as this consumer does not function as an isolated entity. The approaches of both Mylonpoulos and Doukidis (2005:5) as well as Nash and Shulby (2005:57) view the consumer as a resourceful entity in the system and the relevance of value is emphasised, as this leads to the delivery of customer value proposition. Furthermore, Nash and Shulby (2005:57) explain that customer ecology explores the relationship of customers with a business enterprise where the customer is the focal point around which all organisational activity is focused, executed and measured. In addition, the m-business ecosystem acknowledges that learning takes place on a collective

level rather than an individual level and Leem *et al.* (2004:80) add that the individual has a major influence on the m-business model.

2. The organisation

   At the organisational level of the ecosystem, it is relevant that the organisation develops and uses the right business models, creates the right partnerships, designs the right business processes and manages the relevant change processes. Furthermore, the organisation that adopts an m-business model needs to learn and change in much the same way as any other innovation in information systems. An example of an organisation that has adopted an m-business model is that of Finnair as it has developed an m-business solution that enables passengers to answer seat selection and food preference questions on their mobile device instead of waiting in a queue to check-in for a Finnair flight (Giussani, 2001:160). The Alton Towers Amusement Park in the UK is another example of an organisation that has adopted an m-business solution and allows visitors who are prepared to pay a little extra not to have to wait for hours in a queue as the visitors to the Park process the entry fee as a transaction using their mobile phone and move right to the front of the queue (Koekemoer, 2004:556).

3. The industry

   The industry level involves a number of actors in m-business and includes every layer of the infrastructure or service, from security to roaming and payments. It is important at this level to collaborate services and innovate in order to deliver value to the consumer. An example hereof is the Austrian railroads that introduced a ticketing system whereby a train ticket could be bought and issued using a mobile device (Koekemoer, 2004:556).

4. The society

   The challenge at the society level of the ecosystem is to rebuild a system of values and norms that are appropriate for mobile-mediated interactions. This entails defining and enforcing rights and obligations with regard to privacy, intellectual property rights, security and consumer protection. An example of an association that is currently building a system of values and norms that is appropriate for mobile-mediated interactions in the advertising industry is the Wireless Advertising Association (WAA). The WAA aims to create an environment that ensures security, privacy and consumer protection as consumers are in many instances requested to interact with organisations when exposed to wireless advertising (Keen & Mackintosh, 2001:193).

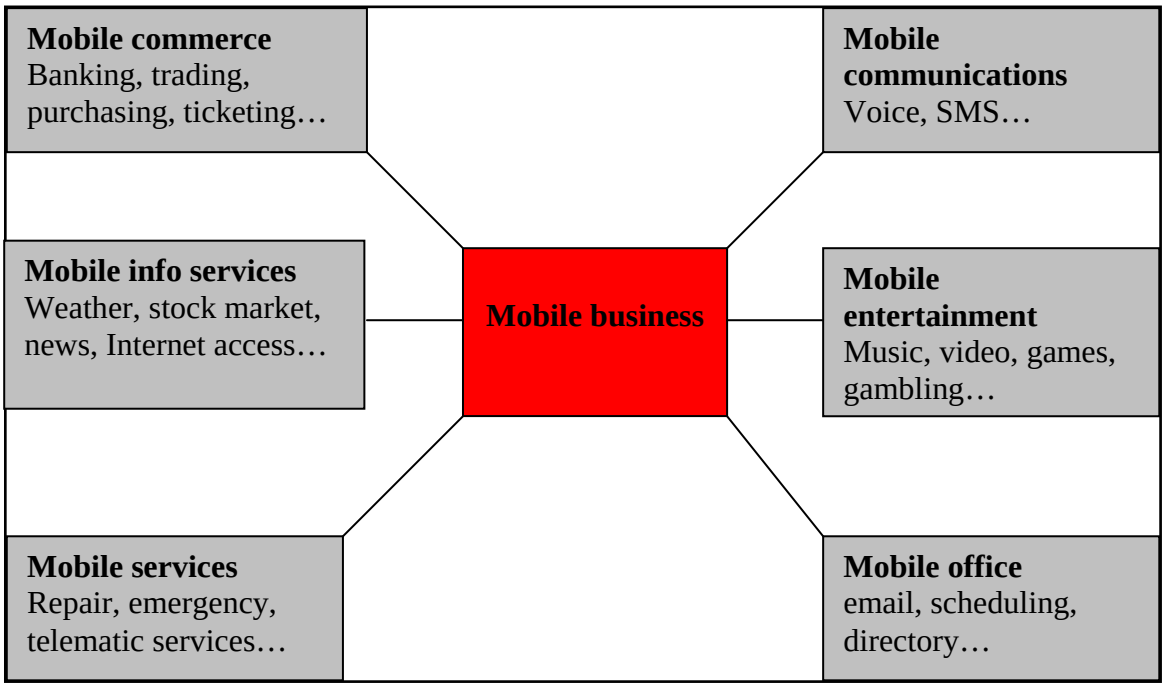
In view of the discussion pertaining to the m-business ecosystem, it can be argued that m-business does not exist in isolation but is embedded in complex socio-economic contexts. These contexts refer to the environments that have all been formulated and constructed differently over

time. In addition to the various m-business definitions and the ecosystem discussed, m-business consists of various categories that refer to the fact that m-business can be divided into different types of m-business.

4.4 M-BUSINESS CATEGORIES

Siemens (Anon., 2000c) has developed a model (see Figure 4.4) depicting the various categories of business that take place in an m-business structure.

Figure 4.4: Mobile business categories (Anon., 2000c)



It is necessary to elaborate on the six different categories of m-business and what each category entails (Anon., 2000c):

- M-commerce refers to the use of a mobile device to process a transaction and includes banking brokerage, trading, ticketing and auctions. With regard to m-commerce, Raina and Harsh (2002:47) highlight that financial services have found an eager marketplace for wireless services and various banks utilise this tool to create value for customers as they can now access their account over a wireless network for transfers, billing and other m-commerce transactions.
- Mobile information services assist the consumer in accessing real time information that can turn this individual into an entity that is *always on*. This includes weather details, stock

market news and Internet access. Raina and Harsh (2002:210) refer to the example of current news sites such as CNN, Reuters and BBC adding value to consumers' lives as these sites now offer a service whereby users can configure their mobile devices to receive news content from the online news provider.

- Mobile services refer to tools that assist with business management and include emergency control and fleet management. Mobile services have been utilised by hospital ambulances in Sweden to add value to the services delivered by means of an m-business structure (Keen & Mackintosh, 2001:82). More than fifty ambulances were fitted with a Wireless Internet Local Area Network (LAN) and linked to the hospital's databases and electronic record system via Mobitex. These ambulances are tracked with a Global Positioning System (GPS) and when they arrive at the scene of an emergency, a palmtop computer is used to collect critical information about the victim. An embedded barcode reader takes the data from monitors and medical equipment on the spot and this information is then sent to the hospital en route. This wireless communication system is also used to check the victim's medical history and/or patient information such as allergies using wireless communication. On the arrival of the ambulance at the hospital, the necessary paperwork for admittance is completed and medical staff have the available information at hand.
- Mobile office refers to the use of mobile devices to ensure the effective management of business schedules and communication, and includes tools such as email and scheduling. As indicated by Koekemoer (2004:557) highway police in Australia use GPRS phones to check on data about speeding cars and full driver history, which is made available in five seconds. Similarly, doctors in France utilise the mobile office function as an m-business tool as they are directed to different patients for house calls with their mobile phones.
- Mobile entertainment is the delivery of entertainment services over a mobile device and includes music, video, games and gambling. As explained by Koekemoer (2004:556), NTT DoCoMo FOMA 3G users in Japan can now watch full TV coverage using video streaming to their mobile phones.
- Mobile communication refers to the use of communication tools enabled by a mobile device, including voice and SMS. In the light of this, Keen and Mackintosh (2001:4) add that a new SMS culture has emerged that allows for new freedoms linked to mobility, which means that children and parents can keep in close touch throughout the day. Asmuth (2006) highlights the growth of this medium and mentions that 304 billion SMS text messages were sent by the Chinese market in 2005 and similarly 81 billion SMSs were sent by the Americans in the same year.

As illustrated in Figure 4.4, the various m-business categories can all be utilised in different ways to ensure that value is offered to mobile users. The relevance of value is highlighted by Siemens (Anon., 2000c), who states that m-business users expect applications that are easy to use and offer a high level of personalisation as this is perceived as value. Furthermore, it is relevant that the information offered to the user is localised and satisfies the requirements of highly time-critical transactions. In addition, the delivery of ease-of-use, personalisation, localisation and real-time information will lead to the creation of a customer value proposition that takes the characteristics of the New Consumer, functioning in the New Economy as an ecosystem, into consideration.

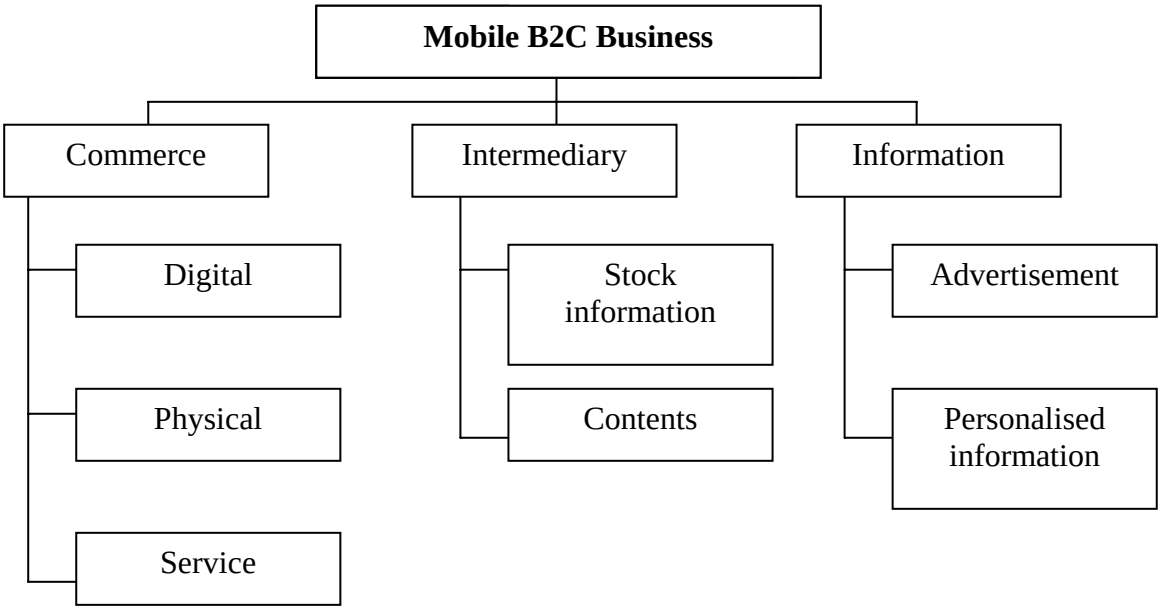
In addition to the various m-business categories identified, Leem *et al*. (2004:79) explain that there are various m-business models that function within these various categories.

4.5 M-BUSINESS MODELS

According to Timmers (quoted by Maitland *et al.,* 2005:50), a business model is the organisation or architecture of product, service and information flows, and the sources of revenues and benefits for suppliers and customers. Furthermore, Keen and Mackintosh (2001:212) highlight that similar business models exist in both e-commerce and m-commerce, and both share the same overall technology platforms, but differ in their market and application focus. The various m-business models are distinctive as they relate more to the technology platform and are aimed at reaching a mass consumer market. Siemens (Anon., 2000c) concurs and adds that mobile service providers are developing business models that differ from those used in e-business as their personalised and highly specialised information and services are made available only to consumers who are willing to pay for them, unlike the typical practice on the Internet today, where business models that are driven by advertising and sponsoring cover the cost of providing the information. With specific reference to m-business models, there are various types of models, including business-to-consumer (B2C), business-to-business (B2B) or business-to-employee (B2E) models (Leem *et al*., 2004:81). As illustrated in Figures 4.5a and 4.5b, the B2C m-business models and the B2B/B2E m-business models respectively show that a number of sub-categories exist in these models.

As shown in Figure 4.5a, Leem *et al*. (2004:81) are of the opinion that m-business services rendered in the B2C model are done via a commerce, an intermediary and lastly an information function.

Figure 4.5a: Mobile B2C business model (Leem *et al*., 2004:81)



In view of the mobile B2C business model, Maitland *et al*. (2005:50) state that the logic of business model development is linked closely to perceptions of value and especially how new value propositions can be created to serve the market. As illustrated in Figure 4.5a, the commerce function of the B2C business model consists of three relevant elements that contribute to this business model and serve as a value-added proposition in the New Economy. The first component is called the digital element referring to the digital processing of a business transaction and refers to digital information transported over a mobile device that adds value to the New Consumer's life and examples hereof are games, MP3 files and ebooks. A specific example of ebooks is the download of the bible on a mobile device. According to Simon (2006) the bible can be downloaded onto mobile devices such as Blackberry by using Olive Tree Bible Software. The second element is the physical element, which refers to the fact that the physical shop or location providing products and services is moved to a mobile space in the business process. Coca-Cola is using a physical mobile B2C business initiative called Dial-a-Coke and this m-business service entails the display of a telephone number on the Coca-Cola vending machines that mobile device users must dial when they purchase a drink (Keen & Mackintosh, 2001:111). When the mobile device user dials the number, the drink is dispensed and the cost is recorded as if it were just a telephone call. Value is thus added to the consumer's life as these individuals function as an *always on* individual with a mobile wallet. The last element is called the service element within the commerce function, which refers to the convenience factor that B2C business models offer. As indicated by Leem *et al*. (2004:81), the service element refers to services such as email, banking and ticketing. A ticketing example of the service element is

found in Norway where the Norwegians were the first to deploy a parking payment solution based on SMS in 2000 and by 2004 more than a third of all parking tickets were paid using a mobile device (Koekemoer, 2004:555).

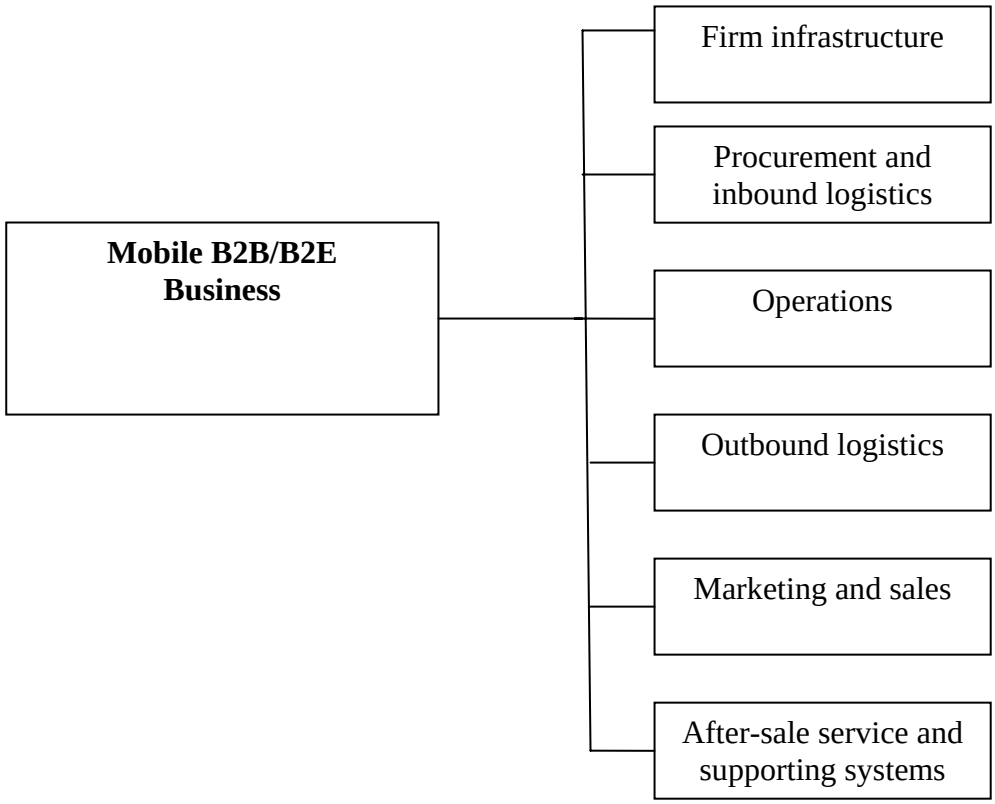
The second function of the mobile B2C business models refers to the intermediary function, which focuses on the provision of information and content. This function contributes to convenience being delivered and turns the consumer into an individual that can function anywhere as relevant content is delivered in real time. The intermediary function consists of two elements called the stock information element and the contents element. This function also contributes value-add to the consumer's life in the New Economy as information- and context-specific content is communicated at a relevant time and an example is the services rendered by News24 in South Africa, which ensures that the consumer receives two day weather forecasts via their mobile devices if this service has been requested (Goldstuck, 2005:99). Similarly, another value-added service that is rendered in South Africa as an intermediary function within the mobile B2C business model is that of Setso Africa and Rrapid, which render an SMS service for N3 toll-road users and provide road users with immediate access to vital real-time information that could affect the journey. This SMS service informs road users of the accidents, traffic congestion and extreme weather conditions on the 418 km N3 toll-road and is rendered for R7.50 an SMS.

The last function of the mobile B2C business model is the information function which includes advertisements and personalised information that emphasises the personalisation of information in the New Economy. The information function creates convenience and value for the New Consumer functioning in the New Economy and adds value to the lives of these individuals by offering personalised services that enable them to make informed decisions while being mobile. An example of a company that offers this information service is Heineken as this global leader in the beer market offers its BarTrek mobile GPS service that locates and describes what the company views as the nearby great bars in fifteen cities around the world using GPS (Keen & Mackintosh, 2001:125).

In addition to the mobile B2C m-business model, Leem *et al*. (2004:81) developed the mobile B2B and B2E (business-to-employee) business model as illustrated in Figure 4.5b. This model integrates both the B2B and B2E components involved in m-business and shows the scope of mobile business or mobile solutions in an organisation's business process. This model includes

six components, which are firm infrastructure, procurement, operations, outbound logistics, marketing and sales as well as after-sale service and support systems.

Figure 4.5b: Mobile B2B/B2E business model (Leem *et al*., 2004:81)



As highlighted by Mylonpoulos and Doukidis (2005:10), "the ultimate aim in m-business is to create new experiences of social interaction between individuals and between individuals and businesses". From the illustration contained in Figure 4.5b, it can be deduced that the experiences that are created can be seen as value within the business structure and to the consumer using the services rendered by the organisation utilising an m-business structure. In the light hereof, Goodwin *et al.* (2002) adds that m-business models should be developed and applied with the goal of leveraging business intelligence to its full potential, meaning that the organisation has to function at its optimum capacity and at its best performance levels.

The first function of the mobile B2B/B2E m-business model refers to firm infrastructure, which is defined by Leem *et al*. (2004:81) as the component that ensures that m-business is used in general decision making and information sharing in the organisation. By integrating m-business into the organisation's infrastructure, value can be generated by reducing costs or making information-sharing easier. An example hereof is Sears who deployed 15 000 mobile devices

based on the Palm operating system for use from its receiving to replenishment cycles in 860 department stores (Keen & Mackintosh, 2001:143). The handheld devices have built-in barcode scanners and are enabled with a wireless LAN modem, meaning that this device can communicate wirelessly. These devices are used to manage inventory price changes and when a truck arrives at a store, a worker will scan a label on the truck and all the information will be sent to an in-store system via the wireless LAN, thereby saving the need to check each item manually. Furthermore, the second function called the procurement and inbound logistics function refers to the fact that m-business allows for support on inbound logistics and could assist in working more efficiently. An example of an organisation that utilises m-business for procurement and inbound logistics reasons is eDispatch.com as it provides the organisation with a smartphone service that allows management to assign new jobs to mobile employees, which means that an employee will receive a task while on the road with the particular details regarding the problem and/or the customer (Keen & Mackintosh, 2001:143). Furthermore, the third function refers to operations, which refers to the assistance that m-business structures can offer on the inbound operations of the organisation. An organisation that utilises m-business to improve inbound logistics is the Canadian subsidiary of Adidas and the effectiveness of the tool was proved when it had the lowest distribution cost of any of Adidas's operations around the world in 2000 (Keen & Mackintosh, 2001:143). Adidas had acquired special-purpose mobile terminals with built-in scanners and easy-to-read display screens. These were used in the factory to process information and assist in getting shipping orders ready. Furthermore, the fourth function in the mobile B2B/B2E business model is that of outbound logistics, which refers to the support that m-business can offer on outbound logistics matters. An organisation that has used m-business in the outbound logistics component is the Home Finish Builders as the staff members are handed Palm PDAs and when walking through recently built houses, they can immediately send repair notices to a central database of the organisation where the responsible staff members at the Home Finish Builders can then organise that repairs be done (Keen & Mackintosh, 2001:143). Furthermore, the next function refers to the marketing and sales function and how m-business can contribute to the marketing and sales function in the organisation as sales representatives can communicate with a central database to ensure that the correct required types and numbers of products are available and delivery can be organised. In the light of all the functions discussed, the last function called the after-sales service and supporting systems supports all the other functions. As explained by Leem *et al*. (2004:81), this function refers to the facilitation and support of after sales that m-business offers. Two organisations that have successfully integrated the after-sales and support system in their m-business model are UPS and Federal Express as these organisations provide mobile package tracking software for use on

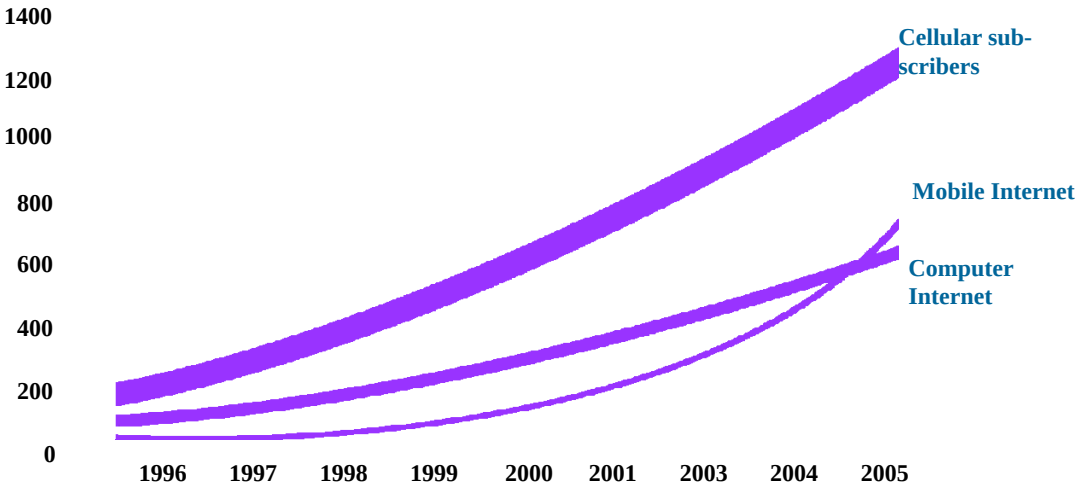
mobile devices. As stated by Keen and Mackintosh (2001:151), UPS had more than 5 000 workers using this system in mid-2000. Furthermore, customers can register at UPS.com and track packages that have been posted, which is rendered as part of an after-sales service.

In view of the discussion pertaining to the various business models and how these models offer different value propositions to both the consumers and the businesses in the New Economy, it is necessary to provide an overview of the state of m-business and how this way of doing business is affected by the growth of mobile communication.

4.6 THE STATE OF M-BUSINESS

As noted by Cruikshank (quoted by Wright, 2006), "Accessing the Internet on a wireless handheld device is no longer a novelty for consumers in the major global economies. It's becoming a common, everyday occurrence for many people." Furthermore, Douglas (s.a.) adds that this new technology is developing rapidly and overcoming developmental problems such as technical issues that include device limitations, device incompatibility and the consumer's reluctance to adopt the technology. Moreover, the increasing consumer adoption of mobile communication becomes apparent when it is considered that the number of mobile subscribers worldwide reached over 2 billion by the end of 2005. In view of the growth that the wireless web has experienced, an escalating trend has developed whereby more consumers access the Internet using a wireless device than a wired device. The major growth has taken place since about 2001 when there were 533 million Internet users, 16% of whom were accessing the Internet using a wireless device (Anon., 2003g). This escalated to 41,5% of all Internet users having access to the web by means of a wireless device in 2004 (Anon., 2003g). As illustrated in Figure 4.6, the wireless web has shown consistent growth and the wireless Internet overtook landline use at the beginning of 2005 (Anon., 2003g).

Figure 4.6: Global wireless subscriber forecast (Anon., 2003g)



The growth in the use of wireless web is emphasised by another author (Anon., 2004i) as it is stated that 1,5 billion handsets, personal digital assistants (PDAs) and Internet applications were equipped with wireless capabilities by the end of 2004, which was set to break through the two billion user mark by July 2006. In view of the growth that has taken place, Wright (2006) adds that just over 28% of mobile phone owners worldwide have browsed the Internet using a wireless handset in 2006 and this is expected to show continued growth as 56,8% of all Internet users will be using a wireless connection by 2007 (Anon., 2003g). This is predicted to rise to 3,96 billion global users accessing the Internet using a wireless device by 2011 (Anon., 2006b).

One of the major contributors to the increased growth in the wireless Internet is the adoption of the mobile phone that has increased significantly in the last few years. As noted by Wallace (2006), thirty countries exceeded 100% mobile phone penetration by the end of the first quarter of 2006. Furthermore, countries such as Sweden, the UK and Italy have already exceeded the 110% penetration mark. This is supported by Devine Kofiloto, the Principal Analyst at Informa Telecoms and Media, who states that “While the proportion of the population using mobile phones has stabilised in most developed-world markets at around 80-85%, the trend among many users for buying second or even third subscriptions shows no sign of slowing.” (Wallace, 2006.) Due to the significant increase in mobile phone penetration globally, it is necessary to elaborate on the relevant statistics.

4.6.1 Mobile penetration around the globe

The growth in the adoption of the mobile device around the globe is reiterated by Fung and Randon (2006) when they state that "mobile phone penetration saw a dramatic growth across Asia/Pacific over the last few years". In 2005, the number of respondents who owned mobile phones in this region reached 90,2% compared to 80,2% reported in 2004. This was forecast to grow to 404 million subscribers in February 2006 (Asmuth, 2006). Similarly, Japan has also increased its mobile phone ownership as it had 79,8 million in 2004 and now has over 70% phone penetration (Anon., 2006d). Furthermore, the Asia Pacific Region will account for 50% of the total number of subscribers worldwide by 2010 with 1,067 billion subscribers shared between China and India alone (Anon., 2006b). In addition, Australia and Singapore have shown the highest growth rates of 11% in terms of mobile phone ownership. The USA was ranked second in 2004 in terms of mobile phone ownership and stood at 157,3 million subscribers, which has now escalated to 207 million mobile phone owners in 2006 (Anon., 2004i). An interesting phenomenon is the fact that wireless Internet usage in the US shows a slower rate of adoption than the consumer in Europe with the European consumer already accepting and using the mobile phone at a faster rate than the Americans in 2001 (Anon., 2001h). In 2003, there was a 3:1 mobile:Internet adoption ratio in Europe compared to the US which had a 1:1 ratio. In view of this adoption rate, Forrester's research projected that one third of the European population was using wireless technology in 2001 (Ghani, 2001) and this has now escalated to a 93% penetration rate with 100% penetration of mobile devices in eight member states (Cooke, 2006). In comparison, 91% of American households were online in 2005 but only 4% of Americans used wireless devices to connect to the Internet (Sutherland, 2001).

Similar to the statistics pertaining to mobile phone penetration, the rate of the adoption of mobile devices has also increased in Africa. The following section offers a discussion on the growth of mobile usage on the African continent with specific reference to a variety of reasons for the growth.

4.6.2 Mobile penetration in Africa

Despite the fact that Africa is the world's second largest continent after Asia, with a total surface area of 30 million square kilometres, consisting of 54 countries and territories housing close to 900 million people at the beginning of 2005, it remains the least connected continent in the world both from the view of the total bandwidth feeding the entire continent and from an Internet penetration perspective (Kearney & Nokes, 2005). However, since the rollout of the first mobile network operator in South Africa in 1994, Africa has seen growth in the use of mobile devices

and specifically mobile phones, with this device now being an indispensable tool for communication, business and trade on the continent. This sentiment is supported by the Accenture Institute for Strategic Change that shows that "wireless is the next big wave" (Beck *et al.*, 2001) in Africa. By the end of 1996 there were 15 million phone users across all 54 nations on the African continent and this consisted of 14 million fixed line users and 1 million mobile phone subscribers (Rose, 2002:1). Moreover, more mobile phones have been in use since 1997 than the number of fixed line connections installed in the last century. This significant growth rate in the use of wireless communication has continued, and in May 2003 mobile phone connections made up more than 65% of the total number of telephone lines in Africa. According to the International Telecommunications Union (ITU), there were 131 million phone users in Africa in 2005 and this comprised 100 million mobile users and only 31 million fixed line users (Rose, 2002:2). The growth of mobile communication in Africa is also evident when it is considered that the number of mobile telephone subscribers in Africa has risen from 8 million five years ago to 100 million in 2006 (Anon., 2006e). Currently, one in every nine Africans has adopted a mobile phone (Anon., 2006e).

There are three main reasons for recording the statistics pertaining to mobile usage in Africa:

- The slow growth rate of the Internet in Africa becomes apparent when it is considered that Africa has just one out of every 70 of the world's personal computers and only 1% of the world's Internet population (Wright, 2003:25). This statement is supported by Nyamnjoh and Hall (2002:1) who emphasise that this is due to the prohibitive costs of purchasing a home computer. Nevin (2002:2) concurs and adds that service costs can add up to around $50 a month, which is the total monthly income of an individual in many African countries. Finally, Nevin (2002:2) states that implementation issues such as infrastructure limitations, i.e. electricity supply and connectivity to the landline phone system, are a problem and prohibit development.
- Furthermore, the introduction of prepaid systems in mobile communication instantly increased access. As stated by Rose (2002:1), "The whole of the African continent is experiencing an emergence of prepaid mobile telephones in Africa." Furthermore, over 80% of all mobile phone subscribers on the African continent used a prepaid service by 2002. Nevin (2002:2) provides examples and shows that already in 2002, prepaid subscribers accounted for 50% of all mobile users in both Egypt and South Africa. In addition, there are 19 million mobile phone subscribers in South Africa in 2006 with more than 90% of all the connections being prepaid users (Anon., 2005j). The growth of prepaid mobile

communication services is not experienced to this extent anywhere else in the world, for example, the USA has a mere 8% prepaid user base and the Asia-Pacific nations have 29% (Rose, 2002:2).

- Weidemann (2003) highlights that the mobile communication market is lucrative and supplies examples such as the scenario in Nigeria where revenue earned from the average mobile phone is twice that from the average US mobile phone. This is despite the fact that the US has 1 000 times Nigeria's GDP per capita (Nyamnjoh & Hall, 2002:2).

In summation, with regard to the discussed statistics, Rose (2002:3) emphasises that South Africa is the telecommunication powerhouse in Africa and holds 55% of all of the continent's mobile phones. Correspondingly, Cant and Machado (2002:1) emphasise the relevance of this country on the African continent and highlight that South Africa holds more than 80% of all mobile phone subscribers in Southern Africa. Due to the relevance of this country when considering mobile adoption, it is necessary to elaborate on the statistics of mobile penetration in South Africa.

4.6.3 Mobile penetration in South Africa

As explained in the Wireless World Forum statistical handbook, South Africa will have close to 30 million mobile phone subscribers in 2007 (Anon., 2006a). This number of mobile phone subscribers adds up to more subscribers than in the Canadian and Australian markets combined and close behind the mobile market in Spain (Anon., 2006a). According to the Wireless World Forum statistical handbook (Anon., 2006a), this boom will slow rapidly with new subscriber numbers falling by 78% as some age groups in the 20-40-year-old demographic group approach 100% penetration.

Furthermore, mobile users in South Africa are expected to grow to 19 million users in 2006 and this is after the 32% penetration rate that was experienced in 2005 (Anon., 2003a). South Africa has experienced significant growth in this industry as a study done by Trialogue in 2001 reported that there were only nine million mobile phones in use in South Africa in 2001 (Anon., 2001c). Subsequently, the number of mobile subscribers has overtaken the number of fixed lines provided by Telkom in 2000 (Anon., 2003a). By the end of 2001, spend on mobile phones was estimated at SAR 15 billion, which is 2,6% of the total consumption expenditure of South African citizens (Cant & Machado, 2002:2). Moreover, in October 2003, research indicated that South Africa had a total of 14,4 million mobile users out of a population of about 43 million people and it was estimated that 80% of these users were active users (Anon., 2003a). Wagenaar

(2004) concurs and adds that mobile phones outnumbered landlines, including ISDN lines and payphones, in South Africa in 2003.

In support of the discussion that illustrates that significant growth is taking place in the mobile phone market in South Africa, it is important to understand the structure of mobile service providers and network providers in South Africa. There are currently only three network providers in South Africa and these companies cover more than 71% of the total South African population (Anon., 2003a). The three network providers are also called network operators as these companies fulfil this function in South Africa, and they provide a mobile service to up to 19 million subscribers in 2006 (Anon., 2003a). They are Vodacom, MTN and Cell C:

- Vodacom (Voice Data Communication) was the first mobile network operator in the borders of South Africa to obtain a licence in 1993. Vodacom serves both a pre-paid and post-paid market. Vodacom is the market leader and surpassed the 10 million customer mark in 2004, of which 1,25 million customers were situated outside South Africa in 2004 (Goldstuck, 2005:77). In 2003 the Vodacom brand name was worth SAR 6 billion and ensured that in excess of 95% of South Africans were within the coverage area of its cellular network in 2005 (Goldstuck, 2005:74).
- Mobile Telephone Networks (MTN) was the second mobile network operator in South Africa and commenced its services a few months after Vodacom. In February 2003 it was reported that MTN had 5,22 million users and 40% of the South African market share (Anon., 2003d). According to Goldstuck (2005:69) this escalated to 14,4 million subscribers from 31 March 2005 with R29 billion generated in revenue. MTN also offers consumers a prepaid mobile package and contract-based subscription. MTN's international operations accounted for 2,3 million subscribers of its total subscriber base in June 2005 (Goldstuck, 2005:69).
- The third cellular provider, Cell C, was announced in 2000 and launched on 17 November 2001. Cell C reached a subscriber mark of 500 000 in the first six months of operation (Anon., 2001b) with 460 000 of the 500 000 subscribers being prepaid users. In 2003 Cell C already had 1.1 million users (Anon., 2003d) while by 2005 the network operator had reached close to the two million subscriber mark (Goldstuck, 2005:68).

Furthermore, the significance of mobile phone penetration and adoption in South Africa is reflected in the following quotation (Neustetter, 2002):

> When addressing 'unplugged' communities from a South African position, one is constantly reminded of the digital divide that is growing, as the knowledge and complexities of online culture and its global power struggles are expanding. The communities that seem to be distanced from this digital culture are however starting to be involved in the process by different media that shift the parameters of who is "unplugged", and what this actually means. Considering the high costs of computers and the availability of related computer literacy training in South Africa, mobile phones appear to be providing an intermediary link in the path to digital communication and a plugged-in networked culture. This is particularly prevalent within youth culture where issues of status and ownership regarding current and upcoming mobile technology function at a highly competitive level.

Taking into account the quotation provided by Neustetter (2002), the relevance of the mobile phone as an intermediary link in the path to digital communication and a plugged-in network culture in "unplugged communities" is highlighted. In view hereof, Lindgren *et al.* (2002:51) emphasise that technical issues form an important component in the creation of these communities as technical prerequisites need to be met in order for mobile communication to function effectively. Furthermore, Lindgren *et al*. (2002:51) define a technical prerequisite as the sum of existing technology combined with people's access to that technology. With reference to the importance of technical prerequisites, it is relevant to elaborate on the key enabling technologies of m-business.

4.7 KEY M-BUSINESS ENABLING TECHNOLOGIES

The development of technology has gone from analogue to digital technology, and the newest technology allows for mobile communication to take place via the mobile device. Quigley (2001:13) supports this statement and adds that businesses are going mobile using existing second-generation networks to improve profitability and create new revenue streams rather than waiting for next generation promises. Wireless communication as the enabler of m-business requires a minimum of second generation (2G) technology to function effectively and according to Lightman and Rojas (2002:33), wireless telecommunication has evolved from first generation technology (analogue) to second generation technology (digital) and has now reached third generation technology, which is *always on* and permits a faster data transfer rate. The first generation mobile communication system was insufficient in delivering any form of wireless communication and subsequently the second generation system is known as the advent of digital

mobile communication. Digital mobile communication systems provide reliable, high-quality voice and data mobile transmissions, and it has the security against eavesdropping and cloning, which was not an advantage with the usage of analogue systems (Lightman & Rojas, 2002:33). In view of the developments that have taken place in mobile communication, the mobile phone has been transformed into a device with low-power digital signal and speech processing subsystems, coupled with an on-board microcomputer and dynamically loaded software and thus enabling the New Consumer to function as an *always on* individual (Lightman & Rojas, 2002:33).

Moreover, second generation technology is the dominant wireless network used in South Africa (Anon., 2003e:229). The second generation wireless networks competing for global market share are Global System for Mobile Communications (GSM) and Code Division Multiple Access (CDMA). At the same time that GSM was developed, the United States developed CDMA, which is a more advanced digital standard that uses spread spectrum technology, which is similar to packet-switching over the Internet. CDMA was not adopted automatically in all countries and as the Americans were developing this enabling technology their European counterparts were developing GSM. CDMA was commercialised in 1995 but GSM is the prevailing mobile standard in Europe and most of the Asia-Pacific region (Anon., 2003e:229). GSM is also used by more than 215 million people, which represent 50% of the world's mobile phone subscribers (Lightman & Rojas, 2002:34). However, second generation technology has been developed further, which has led to the development of more sophisticated technology such as 2,5G technological systems.

The typical more advanced second generation (2,5G) technology is packet switched, which means that the user is constantly connected and only pays for the amount of data transferred (Lindgren *et al.*, 2002:54). GPRS, a packet-switched service for GSM, mirrors the Internet model and was the first transport mode that allowed for full instant mobile Internet access and is a platform for wireless data services and applications (Lightman & Rojas, 2002:73). GPRS enables operators to develop and implement various payment models for mobile services and a combination of these models can also be employed (Anon., 2001i:5). According to Nokia, GPRS is ideal for interactive games, online auctions, chat, newsgroups and gambling (Anon., 2001i:5). GPRS was rolled out by both Vodacom and MTN in South Africa in the latter half of 2002 and the objective was to increase the contribution of data services to overall revenues to 25% in the next five years (Anon., 2003e:230). However, there are a number of barriers limiting the adoption of GPRS technology, including the following: (Anon., 2003e:231-232):

- GPRS is promoted as an *always on* connection but is also exposed to the same interruptions, including congested networks, eccentric phone software and problems with regard to seamlessness.
- The roaming agreements that GSM operators have with operators in other countries do not apply to GPRS. As such, new roaming agreements have to be set up for GPRS.
- GPRS differs in pricing from GSM as it is focused on data quantity rather than call duration.
- GPRS is currently restricted to the post-paid market, meaning the contract user of MTN, Cell C and Vodacom. The post-paid users form less than 10% of the total South African subscriber base.
- Appropriate handsets can create a problem as only about 5% of each operator's user base could accommodate GPRS in 2003.
- GPRS relies on the content and applications that operators provide.

Another enabling technology to mobile services is Wireless Application Protocol (WAP), which is a leading global standard for delivering information over wireless devices (Anon., 2004h). Simplistically defined, WAP is a protocol that makes it possible to handle data and information across a radio interface. As defined by Anon. (2000g) state that the WAP-enabled mobile phone includes a micro browser that allows for dial-up into an ISP and access to the Internet. Furthermore, WAP bridges the gap between mobile devices and the Internet as it offers a variety of services to the subscribers independent of the network, bearer or terminal that is used (Anon., 2004h). As stated by Fellows *et al*. (s.a.), WAP is communication protocol and application environment that provides service interoperability between different devices and offer personalised location-based services such as mobile banking, real-time news, online shopping and electronic cash payment facilities due to its GPS capabilities. When using WAP technology, users are enabled with a wireless device with which they contact the service provider and request a wireless service. The user needs to use a wireless phone or Personal Digital Assistant (PDA) that works with that of the service provider's non-digital networks. Digital compatibility is ensured in this business model as all WAP-compliant devices work with all WAP gateways. The user then enters WAP-enabled websites and can purchase or require a service. In support hereof, Gutzman (2001:105) adds that "WAP is the place to be" as these affordable devices are visible in the market and are the only standard in place that handles the secure transmission of data for financial services.

Furthermore, another type of technology that assists in m-business is Wireless Internet Gateway (WIG) and this type of technology gives WAP and SIM Application Toolkit (STK) terminals access to Wireless Mark-up Language-based (WML) applications. WIG can be described as a tool that brings WAP to legacy terminals via SMS and supports end-to-end security, push and location-based services (Anon., 2005j). Moreover, WIG is a menu-driven SIM card application and allows for easy navigation through the menu. WIG uses SMS as the bearer and is ideal for allocations like Internet banking, secure transactions, payment solutions and applications used in the SMS and USSD environment. SMS, a type of mobile messaging, is the transmission of short text messages to and from a mobile phone, fax machine and/or Internet connection, and is limited to 160 characters, composed from a numeric keypad on a mobile phone (Lee, 2002:19). Similarly, Krishnamurthy (2003:385) defines the term SMS and adds that it can be sent from a personal computer or Personal Digital Assistant (PDA). SMS was commercially launched in 1993 and the use becomes apparent when it is considered that 1 000 billion SMSs were sent around the globe in 2005. Furthermore, this escalated to 235 billion being sent in the first quarter of 2006 (Anon., 2006f). In the light of the growth of SMS usage, the total revenue generated for 2005 was US$35 billion and this contributed $55 billion to the US that was generated for all types of mobile messaging (Anon., 2006g). The growth of the SMS market is also noted in South Africa as a total of R1,964 billion was generated for SMS revenue in 2005 and it is predicted to escalate to R2,996 billion in 2006 (Anon., 2006h).

In view of the significant growth of SMS usage, Wagenaar (2004) mentions that SMS has transformed the way in which people communicate and this is being done utilising SMS technology such as the following (Lee, 2002:24):

- Enhanced Messaging Service (EMS) is the next evolutionary step between SMS and multimedia messaging service (MMS) and adds an extra level to the text-based SMS such as a pixel image, animation or ring tone.
- Mulitmedia Messaging Service (MMS) is the improvement of EMS and allows the user to send and receive rich media messages, which are a combination of text, sound, images and video.

In addition, with regard to the discussion pertaining to the key enabling technology of mobile communication, third generation technology (3G) is the term for the next step in the evolutionary process of mobile technology development (Müller-Veerse, 2002:20). This system features high-speed data transmission, Internet access, wireless packet data, and various multimedia services.

Third generation technology carries wireless communication by using radio waves (specifically 230 megahertz) and as stated by Ondrus (s.a.) the arrival of 3G services will address some disabling problems and deliver more possibilities for mobile applications. Due to the fact that 3G is not a prerequisite for the delivery of m-business functions, it is not necessary to elaborate on this specific technology.

In the light of the overview on the required technologies that are needed to offer m-business, it is clear that technology is developing at a rapid pace. As emphasised by Keen and Mackintosh (2001:52), m-business technology is moving faster than wired Internet and wired e-commerce, and with the development, many of its key elements are new and unproven, which makes it very difficult to plan for m-business and the technologies needed for it. This leads to a scenario in which it is difficult to make predictions about the market and how it will develop. In view of this statement, it is relevant to investigate the various characteristics of m-business to ensure effective planning by organisations. Furthermore, an explanation of how the four constructs of über-commerce (u-commerce), which is the next step in the evolutionary process, are manifesting themselves in m-business, needs to be provided to illustrate the rapid development of this application as a business tool.

4.8 M-BUSINESS CHARACTERISTICS

As stated in an article published in the Computer Technology Review (Anon., 2004h), m-business has to offer the New Consumer a customer value proposition that adds pragmatic value in the New Economy. As noted by Junglas (2002:17), this value is delivered by ensuring that mobile applications, mobile networks, mobile devices and data integration take place and these are all determinants in taking the m-business arena to what Watson (2001b) calls über-commerce (u-commerce). In view of the development of über-commerce, also called ultimate commerce (Junglas, 2002:i), m-business is showing that the four constructs of u-commerce are already visible within m-business and contribute to the development of an environment where value is created for the New Consumer in the New Economy.

4.8.1 The manifestation of the four u-commerce constructs within m-business

U-commerce is a state that refers to the "use of ubiquitous networks to support personalised and uninterrupted communications and transactions between a firm and its various stakeholders to provide a level over, above, and beyond traditional commerce" (Watson, 2001b). As such, u-commerce represents the convergence of the physical and the digital, brick and mortar commerce

joining with web-based wireless and other generation technologies, such as 3G, to create new levels of convenience and added value services (Anon., 2001e). Furthermore, u-commerce involves around-the-clock interconnectivity and devices that "talk to one another", people and networks (Anon., 2001f). As stated by Hall (quoted by Anon., 2001f), the u-commerce era is one in which products are no longer products but become services or a synergistic amalgam of products and services in which the physical product is a vehicle for the value-added services that consumers need and want. This is supported by Botha (2001) who states that u-commerce means that the consumer can contact and access the brand or service anywhere and at any time i.e. today the consumer could be in a showroom and tomorrow the consumer could visit the same brand via the website, mobile phone or interactive television. Moreover, u-commerce is identified by certain u-constructs that are as follows (Watson *et al*., 2002:332):

1. Ubiquity is the first construct and refers to the need to fulfil both real-time information and communication anywhere, independent of the user's location. Junglas (2002:22) supports this definition and adds that ubiquity refers to the characteristics of reachability and accessibility, meaning that the consumers can function at "any time" and in "any place" as an *always on* individual.
2. The construct of uniqueness addresses the issue of personalisation and how the characteristics of localisation and identification are used to offer a unique service. Junglas (2002:22) adds that this refers to the fact that personalised information can be offered to the New Consumer, which allows for one-to-one marketing.
3. Universality is the third construct and describes the aspect that the current mobile devices in the market are limited in usefulness as they are not universally usable as these devices depend on both networks and different device requirements that differ around the globe (Junglas, 2002:23).
4. Unison is the fourth construct and covers the idea of integrated data across multiple applications and the automatic synchronisation of these devices. Junglas (2002:24) concurs and adds that unison, similar to universality, creates a "mobile-to-ultimate transition".

In the light of the discussion pertaining to the u-commerce constructs, m-business should aim to construct information and communication systems and business environments that are based on all four constructs (Junglas, 2002:24). In this regard, a good m-business model will integrate the characteristics of m-business, or wireless communication, and the u-commerce constructs will be a product of the environment that is created. In view of what has been discussed regarding m-business, the next section will discuss the various characteristics of m-business and illustrate

how m-business offers many advantages to the New Consumer functioning in the New Economy.

4.8.2 The characteristics of m-business

There are numerous characteristics of m-business that need to be considered when discussing the m-business as a tool used by many organisations to create a value proposition. These m-business characteristics make m-business unique as it ensures a business model that differs completely from the brick and mortar model of business. The characteristics are as follows:

- Wireless communication, as the key enabler for m-business, allows for multimedia communication channel usage by the New Consumer and as stated by Klippenberger (2000:38), "there is no escape, it's a multimedia channel world…". According to Roland Berger Consultants (Anon., 2002e), multimedia refers to richer content by using colour graphics and streaming audio and video that allow the consumer to watch cartoon spots, business news or sports highlights on a mobile device. Furthermore, multimedia networking is a very important element in the New Economy as it enables the New Consumer to conduct business and communicate in the New Economy by means of a mobile device that can be used anywhere and at any time. This is made possible with the use of new enabling mobile technology together with the capabilities of *killer* applications that allow the consumer to use more than one sense when perceiving a message. Furthermore, this individual functions as a device-agnostic entity and uses multimedia communication channels to communicate and conduct business. According to Stone *et al.* (2001:6), the reasons for the use of a multimedia communication channel approach by the New Consumer varies from privacy, time constraints or the lack of information and moreover the changing of channels should be possible in all the stages of the application or enquiries process.
- The second characteristic refers to the fact that the New Economy is an economic model that is seen as pervasive. As stated by Roland Berger Consultants (Anon., 2002e), this has been brought about by the miniaturisation of mobile devices and the fast transmission speeds that form part of the New Economy. The mobile device has become a "one box" concept that delivers multiple functions in the New Economy and offers the opportunity to conduct business and communicate anywhere and at any time (Anon., 2002e). Consequently, this refers to the construction of ubiquity, one of the u-commerce constructs, as the New Consumer can function effectively, irrelevant of the time or place as long as the individual is using the correct mobile device. Furthermore, this is described by Leem *et al.* (2004:79) as

the timeliness aspect and is one of the ways of offering value to the New Consumer functioning in the New Economy.

- Privacy has become a pertinent issue with the development of m-business and specifically the invasion of the consumer's personal space (Anon., 2002e). As discussed in the context of e-business, permission-based marketing plays a very important role in the New Economy and the relevance of planning, with regard to the customisation of messages has become very important. In view of Permission Marketing, Kavassalis *et al.* (2003:9) have developed a concept called Mobile Permission Marketing, which stipulates guidelines and issues that need to be taken into consideration when engaging in mobile marketing. This is based on the approach of Godin (1999b) and the theory of Permission Marketing with specific reference and application to mobile communication. The principle of Permission Marketing is based on the fact that permission is the art of marketing to people who want to be marketed to, and doing it with anticipated, personal and relevant messages (Godin, 1999b). Gaining permission from consumers before sending any promotional messages is still a core component of any Mobile Permission Marketing campaign. In support of this, Kavassalis *et al*. (2003:9) stipulates that the mobile marketing channel should function as a complement to other marketing channels such as television or radio. Another principle of mobile marketing is prospect-initiated communication followed by the possibility of an active two-way exchange. By using this method, a mobile marketing campaign can successfully target prospects if it discovers the interested consumers and avoids irritating the others.

  In addition, Kavassalis *et al.* (2003:10) emphasise that there are four types of Mobile Permission Marketing and the use of these different types depends on the permission that is obtained from the consumer. They are as follows:

  1. The first model is referred to as a one-off push model and is used for relationship generation and maintenance. This model entails that the mobile user responds to SMS-based promotional messages or signs up to receive SMS-based promotional messages where preferences and interests have been indicated. This model does not have a high level of permission intensity as it is usually a broad-based marketing campaign aimed at many consumers.
  2. The second model is called a one-off pull model and entails a marketing campaign that focuses on a smaller number of consumers than the one-off push model. The one-off pull model also requires high-intensity permission and buying behaviour is closely monitored and analysed when this model is used.

3. The third model is referred to as continued dialogue and is used in loyalty creation and maintenance. This model entails that marketers create conditions for interacting with consumers on a continuous basis and is used to create sustainable stable demand and sales for a set period.
4. Finally, the fourth model is called fund-raising and is a simplistic method used to motivate mobile users to donate to a charity.

- According to Roland Berger Consultants, m-business, and specifically wireless communication, needs to be "cool" (Anon., 2002e). The mobile device has become an entity within the New Economy that has moved from an utility function to an entertainment-driven entity, for example, the individual can personalise the mobile device with a ring tone and cover for the handset,which can reflect the personality of that individual (Anon., 2002e). Furthermore, the personalisation that is offered by the mobile device refers to the u-commerce construct called uniqueness (Junglas, 2002:22). The success of offering a unique service is becoming more apparent as wireless devices such as mobile phones have shown a growth in the youth market as daily screensavers, special ring tones, icons and personalised handset designs are being used more often (Anon., 2002e). Moreover, the characteristic of being "cool" is extended to the entertainment function and the growth that is shown in the adoption of gaming features in the youth market. Sony has partnered with DoCoMo to link PlayStation consoles to each other and to wireless phones in Japan. This will allow multiple remote users to play games simultaneously (Anon., 2002e). In addition, sleek shapes and aesthetic designs have proven to be a very important aspect with the mobile user. Consequently, Levi's has formed a consortium with companies like Adidas and France Telecom in 1999 and called it i-Wear. The consortium is dedicated to developing wearable computing (Anon., 2002e:14). Swatch is working with Motorola to offer SwatchTalk, which is a combination of a wireless phone and wristwatch (Anon., 2002e:14). In view of the growth of the popularity of multimedia entertainment services, it is forecast to sustain the growth rate and generate over US$27 billion by 2008 and have more than 2.5 billion users (Anon., 2003f). Similarly, mobile music applications were worth US$ 4 billion in 2003 but were set to increase by 75% from 2003 to 2008 (Anon., 2003f). Furthermore, mobile gaming and applications were set to increase by 638% in the same period (Anon., 2003f).
- Another characteristic identified by the Roland Berger Consultant research (Anon., 2002e) is the fact that wireless communication and specifically m-business must move from a regional focus to international expansion, meaning that the u-commerce construct of universality is developed. This process of globalisation would require the seamless integration of devices enabling the New Consumer to function anywhere and at any time without being dependent

on the retailer or a specific device thus the New Consumer becomes an entity that is *always on* and functions in a shop front that is always open.

- The mobile consumer in the New Economy is *always on* as this person is enabled with a multifunctional device that is also referred to as a smart device. This individual can access, synchronise or process data at any time irrespective of the location of that person and this is done by using the mobile device. M-business has made it possible for the consumer to function in an environment driven by actions delivered in real time where time is of the essence. Henderson and Harrison (s.a.) supports the concept of being *always on* and emphasises that success will depend on key concepts such as being focused, relevant, location specific and timely. This is supported by the ARC Group (Anon., 2000c), which highlights the relevance of m-business elements such as timeliness, remote access and location-based services. Leem *et al*. (2004:79) concur and mention the remote access characteristic that contributes to the creation of an *always on* individual.

  Consequently, businesses and industries that rely on the delivery of real-time information benefit from the advantages that m-business offer, for example, mobile banking solutions are increasing in the South African market and this is due to the mobility that it offers South African bankers. Ghani (2001) emphasises that this is made possible by the development of technology, rapid growth in wireless coverage, improvement in handheld devices and bandwidth efficiency. Furthermore, First National Bank is an example of a South African financial institution that has taken this opportunity. A product called inContact has been launched whereby the registered user is notified by SMS when money is placed in an account or drawn from an account. The user is also notified if the Internet banking website has been accessed or utilised by any individual. In addition, PlanetHopper is another example of how relevant timeliness is when dealing with wireless communication. This company provides the ideal forum for last minute capacity management deals, i.e. short-lived coupons meant to fill restaurant and theatre seats that will otherwise go unused. Theatres and restaurants become paying clients of PlanetHopper and users opt to receive promotional messages.
- The New Consumer demands improved convenience that is delivered through the use of wireless communication. This type of communication allows for the consumer to function at any time and anywhere, and the advantage is that the mobile device is a personal utility that is constantly with its owner. The ease and convenience offered by mobile communication become apparent when the example of Digital Rum, a wireless shopping assistant, is considered. As explained by Andrews (2002), Digital Rum was Europe's leading m-commerce solutions provider as it won the Mobile Choice Consumer Awards in 2002. The

consumer using Digital Rum can compare prices and product information while enjoying the experience of shopping in the physical store or completing the process in the comfort of their own home. If Digital Rum finds the product cheaper at another retailer, the shopper has the opportunity to place an order on the product using the mobile device, which means that a service based on convenience is offered. As highlighted by Guissani (2001:180), the Co-founder and Chief Executive of Digital Rum, explains that this tool places the power in the hands of the consumer and coins it consumer empowerment. Furthermore, Lindgren *et al.* (2002:127) are of the opinion that this may be disadvantageous to the retailer as the mobile device enables the individual to purchase a product or service, using the mobile device, from another retailer while standing in the competitor's store.

In addition, airlines are also focusing their attention on convenience and developing initiatives to create more ease and convenience for the New Consumer. Airlines such as Finnair have introduced WAP-based systems that allow customers to make, cancel or alter reservations when using the airline (Giussani, 2001:160). Swissair is also conducting research and launching initiatives into the mobile communication phenomena. When booking on this airline, consumers receive a confirmation message and an electronic ticket on their wireless device (Giussani, 2001:161). If a flight is delayed, customers receive another message informing them about the time delay. Furthermore, the process entails that when the customers arrive at the airport, they are "spotted" electronically and directed to the gate. An aisle or window seat is chosen when the person is checked in. The check-in also takes place electronically and a confirmation that serves as a boarding pass is sent to the customer.

- Another characteristic that works in support of the ease and convenience factor that is brought about by the use of m-business is location-sensitive information that becomes a key element in m-business as knowing the location of the user creates significant value for the organisation rendering the service. Location-based services, better known as l-commerce, are defined as the ability to pinpoint a person's geographic position through the mobile device (Gupta, 2001b). Johannson (quoted by Anon., 2002e) emphasises that being both personalised and location specific, location-based services are emerging as some of the most valuable functions of the wireless Internet. Furthermore, Lindgren *et al.* (2002:127) highlight another advantage brought about by l-commerce, which is that it offers the retailer advantages as it can ensure the precision of advertising and marketing to a particular consumer. Location-based services are developing at a rapid rate and a mandate by the FCC (Federal Communications Commission) processed in 1996 states that half of all new handsets in the United States had to be location-enabled by October 2001 and up to 95% of

all handsets were location-enabled by October 2002 (Junglas, 2002:13). According to ARC Group, location-based services will account for 40% of mobile phone operators' revenue in 2007 as this will amount to $15 billion (Druce, 2002).

There are various organisations that utilise l-commerce as part of an m-business initiative and examples include Coca-Cola who are currently using an l-commerce approach as part of their marketing strategy in the United States. Coca-Cola has joined forces with go2systems.com where the owner of a mobile device can visit the go2systems.com website to obtain a display of relevant information and directions to the nearest Coca-Cola outlet (Gupta, 2001b). Another example of an l-commerce approach is Japan's JNAvi. This is a service that allows mobile phone users to enter a telephone number, address or landmark into the mobile phone, which then searches the area within a 500-metre radius. Users of the service can download a full colour map of the area that is being searched. Three days after the launch of JNAvi, it had 1,6 million hits and this escalated to the system having 2 million hits per day in 2002 with 50 000 users a day requesting a map (Watson *et al.*, 2002:334). Furthermore, another example of a company using an l-commerce strategy is Webraska. This is a French company that offers a mapping system that can point out a destination, i.e. a museum in a city and the easiest way to get to this destination with the directions appearing on the mobile device screen. In addition, a fourth example of l-commerce is that of a London start-up called i-Prox that has developed software for a *buddy* service that notifies friends as soon as they are in the vicinity. A similar project has been developed in Japan where *Lovegetty* is a matchmaking service that gives its clients small mobile devices that beep when they are within 300 metres of another client with a compatible dating profile (Anon., 2002e).

With reference to the l-commerce examples discussed, the relevance of context-specific messages being delivered in real time when they are of relevance to the consumer is highlighted. An example of a context-specific l-commerce strategy is that of Starbucks as it applies wireless communication in a context-specific scenario. Consumers in the United States or Europe can receive messages on their mobile device from Starbucks when in the vicinity of a Starbucks coffee shop and are offered an 'electronic coupon' for one dollar off the next cup of coffee (Giussani, 2001:166). According to PriceWaterhouseCoopers, this is described as the "ultimate in consumer marketing" (Giussani, 2001:166). This example of context-specific information is in support of the concept of context planning, which allows for the construction of the optimal environment for the delivery of messages (O'Brien quoted by Hatcher, 2005:38). As stated by Franklin (quoted by Hatcher, 2005:38), context planning

offers the brand the opportunity to create synergy between the medium and the message. Similarly, l-commerce allow for brands to communicate with consumers in a context where the brand is relevant to the consumer, i.e. as the consumer passes the physical location of the relevant store. It also allows instant gratification by the consumer as an immediate response can take place. The Quick Start Technologies Whitepaper (Anon., 2000b) concurs and states that the organisation must take a complete inventory of the ways in which their customers interface with the organisation, regardless of the customer preference as this audit will provide the organisation with the basis for evaluating the value the client places on every touch point.

- Wireless communication allows for the delivery of unique consumer-focused entertainment that is adapted to the needs of a specific New Consumer. Consumer-focused entertainment in the New Economy includes short games, watching a video-clip, reading a horoscope, catching up with sports highlights or placing a bet and these actions can all be conducted from the mobile device. Consumer-focused entertainment is branded as "entertainment snacks" as these leisure applications tend to be less time sensitive than the goal-oriented services (Giussani, 2000:172). An example of a game is the wireless version of "Who wants to be a millionaire?". This multi-choice trivia competition has over 2 000 available questions designed by Motorola and CodeOnline. Furthermore, the entertainment market is increasing and in June 2001 Nintendo launched the Gameboy Advanced, which can be connected via the mobile device. Sony has also publicised its plans for Psone, a portable and wirelessly enabled version of the PlayStation (Giussani, 2000:174). Furthermore, after the launch of Bridget Jones's Diary, Bridget fans could get daily diary updates via SMS on the progress of her bikini diet or new dating strategies delivered directly to the mobile phone. This service was rendered by Riot Entertainment and cost half a euro for each SMS the person received from 'Bridget' (Guissani, 2001:174).
- Kumar and Zahn (2002) emphasise the value that partnerships can offer in the m-business structure. This is also highlighted by Woolfall (2003) who states that m-business emphasises the need for partnering. Andersen and Narus (1991:2) describe partnering as "a process where a customer firm and supplier firm form strong and extensive social, economic, service and technical ties over time, with the intent of lowering total costs and/or increasing value, thereby achieving mutual benefit". Mylonpoulos and Doukidis (2005:6) as well as Mayo (2002) stipulate that there are important partners, also called stakeholders, in the m-business process. Furthermore, Datta *et al*. (2001:78) support this postulation and state that it is important for organisations functioning within m-business structures to create partnerships with other parties as this will bring together complementary assets and capabilities. Woolfall

(2003) and Datta *et al.* (2001:78) concur and explain that alliances that focus on value-added services that make m-business initiatives more useful to people should receive attention.

With regard to this discussion pertaining to partnerships, McKinsey (Datta *et al.*, 2001:79) emphasises that the best partnership strategy takes place in an open system as an open system allows for open market competition and businesses to grow larger and faster and "by going open from the beginning, the company could capture market share that would otherwise be at risk from the closed strategy of a more effective competitor". According to Woolfall (2003), the unwillingness of partnerships may exist in larger organisations due to the fear of information leakage or a lack of courage from smaller organisations to cooperate with each other. In addition, material rights ownership issues may occur between smaller and larger organisations. As highlighted by Kreyer *et al.* (2002), the integration of partners leads to complex and difficult negotiations. Woolfall (2003) further adds that it could be advantageous for organisations to adopt multiple partnerships as long as they are value-adding relationships. Moreover, this is supported by Mobilocity (2000d) who states that partnering will gain visibility in the market and enable organisations to remain ahead of emerging technologies and standards. A prominent example of a partnership agreement that has focused on emerging technologies has taken place within Brittanica. This company decided to take the mobile route and created a partnership with Palm Inc. as well as the wireless modem company OmniSky Corporation whereby these partnerships would enable Britannica to license content to other wireless websites. After major testing of the application, Britannica was accessible in May 2000 through Palm organisers that had attached OmniSky modems (Kumar & Zahn, 2002). This development was taken further and in September 2000, Britannica introduced its first wireless-phone application on the Sprint mobile phone network. Another example of a partnership is that of DoCoMo, as Japanese consumers who buy goods over a mobile phone are billed as part of their monthly phone bill. The mobile phone company, DoCoMo, transfers that fee to the merchant, but retains a 9% commission. In addition, eBay has a partnership with Paypal, which enables consumers to trade on the eBay auction site using the Paypal system. A buyer deposits cash in an account using a credit card and when the purchase is processed by the consumer, Paypal transfers the cash to the seller's account.

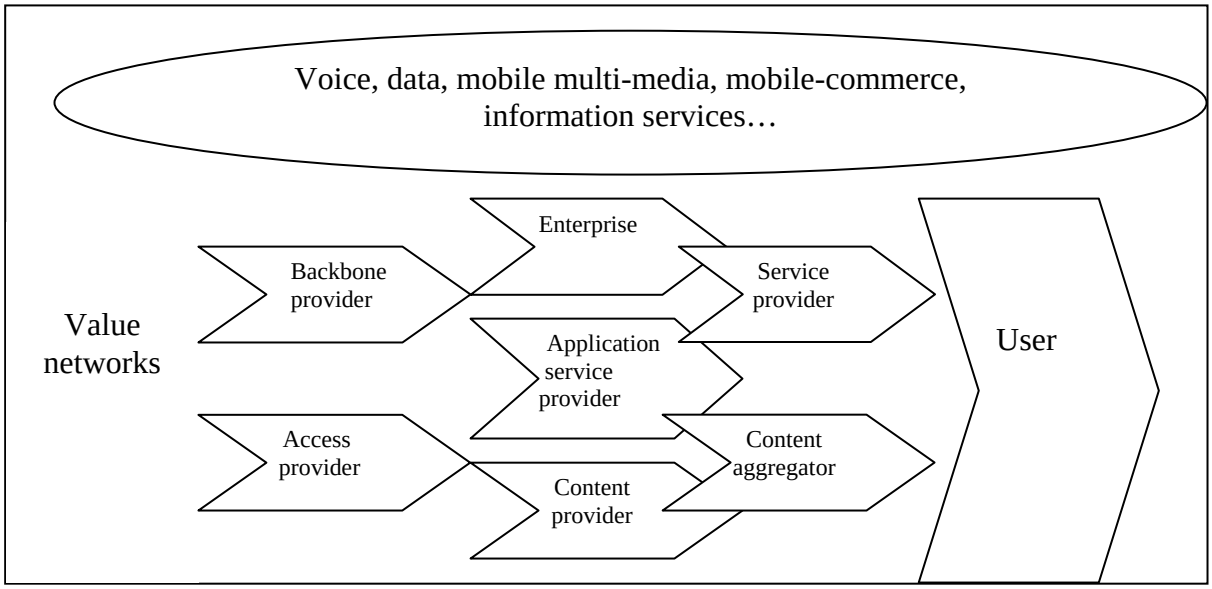
- M-business creates opportunities for businesses with regard to the value that these organisations can offer the New Consumer functioning in the New Economy. As stated by Gobé (2001:xii), the economy that currently exists is a hypercompetitive marketplace. This postulation is supported by Kunde (2002), Glover (2004), Keller and Lehmann (2003) as

well as Prahalad and Ramaswamy (2004:4), who state that organisations need to embrace a new approach to value creation in the New Economy and this approach needs to focus on the shift in value from product to experience, where the consumer influence is included across the value chain and the consumer has multiple points of exchange with products and services.

The term value chain refers to the process through which an organisation adds value to a service or product for the consumer. A value chain is a series of activities that a company performs to achieve its goals at various stages of the production process, from resource acquisition to product delivery (Turban *et al*., 2000:310). Furthermore, Prahalad and Ramaswamy (2004:4) add that value was traditionally created in a series of activities controlled by the enterprise before the point of purchase. This means that the focus was placed on the product value chain with the consumer outside the value chain. Subsequently, the New Economy has led to changes with regard to the consumer and the relevance of the customer in the value chain. This is supported by Prahalad and Ramaswamy (2004:3) who state that the new fundamental challenge for business lies in shifting the view of the consumer, as a passive target market, to understand consumers as actively involved.

In the light of the value creation process in the New Economy, Siemens (Anon., 2000d:8) highlights that there are various players who contribute to the process of creating value. As illustrated in Figure 4.8.2, Siemens has developed an m-business value chain, which illustrates that in order to deliver value to the consumer, an access provider such as the network operators is necessary. This should also be supported by a backbone provider, which refers to the technical aspects that are also dealt with by the service provider. Once these basic requirements are set in place, the next step to value creation in the mobile environment requires that the provider of the mobile application such as the retailer offers an m-commerce service or a bank offering m-banking services needs to set systems in place. This refers specifically to the content provider, application service provider and enterprise. The last step of value creation in the value chain developed by Siemens (Anon., 2000d:8) illustrates that the service provider and content aggregator are then responsible for the delivery of the service to the end-user. The aforementioned relates to voice, data, mobile multimedia, m-commerce and information services.

Figure 4.8.2: M-business value chain (Anon., 2000d:8)



With reference to figure 4.8.2, it can be highlighted that the process of value creation in m-business depends on customer acceptance and the smooth interplay between all the partners in the value chain (Anon., 2000d:8). This sentiment is strongly supported by Brunar and Kumar (2003:6), as it is stated that the success of m-commerce hinges on consumer willingness to adopt new technology and engage in activities using systems and devices different from what has been used in the past. In view of the success of m-commerce, secure and simple payment is a key factor for both the consumer and the partners along the value chain (Anon., 2000d:8). Furthermore, Siemens (Anon., 2000c) is of the opinion that m-business and the payment solutions that may be integrated into the structure need to be reliable, simple and efficient. In addition, it is stated that seamless integration into the existing processes and applications has to ensure that the existing mechanisms are functional.

4.9 CONCLUSION

M-business has manifested itself as a business tool in the New Economy and there are numerous advantages linked to usage for both individuals and organisations. As such, the growth of mobile communication has been significant, which has contributed to an increase in the use of m-business as a tool used by many organisation in the New Economy. In support of this statement, a report on a study conducted by Accenture states that “the future of wireless is bigger, and different, than anyone thinks” (Beck *et al*., 2001). Mahatanankoon *et al*. (2004:2) highlight the growth in the usage of mobile devices and add that mobile devices have been the fastest adopted consumer products of all time with more mobile phones shipped annually than automobiles and

PCs combined. The need experienced for mobile devices is illustrated by Seybold (quoted by Smith, 2000) who states that "time in the 21st century will be the most precious commodity for anyone. …[t]he new economy built around the Internet will be a customer-focused economy that wireless fits into perfectly". Keen and Mackintosh (2001:6) explain that the New Economy rests on customers having choices, information to make choices, confidence in making them and the removal of barriers adding to their choices. As emphasised by Raina and Harsh (2002:4), the freedom to make the choices can be created by using an m-business structure. Keen and Mackintosh (quoted by Mahatanankoon *et al*., 2004:2) concur and state that the key value proposition of mobility is the creation of choice, or new freedoms, for consumers. The organisations or brands that succeed in creating the value in the New Economy will be those organisations that offer intimacy, provide inspiration and leverage identification, and thus offer the consumer a value proposition in which the customer is the core focus area (Beck *et al*., 2001). Keen and Mackintosh (quoted by Mahatanankoon *et al*., 2004:2) add that the demand side of m-business is a search for value and hence there is a need to build an understanding of the elements and special features of wireless electronic channels that are value-adding from the consumer's point of view. In view of this statement, Lourens Botha, the managing director of McCarthy On-Line, is of the opinion that the creation of a value proposition manifests itself within u-business and adds that u-business is the core future business strategy (Botha, 2001). Lourens acknowledges the advantages that m-business offers the organisation functioning in the New Economy and places emphasis on the fact that communication and business priorities are coming together in mobile technology offering access to information, communication and functionality to the New Consumer at any time and anywhere (Botha, 2001).

As stated by Glick (2006), consumers and business priorities coming together in mobile technology and leading to access to information and communication at any time and anywhere, becoming a selling point and a necessity for companies. With regard to the statement made by Glick (2006), a link can be made to the theoretical postulations regarding the need for the creation of value propositions developed by organisations in the New Economy. Moreover, these value propositions are delivered in an environment that is characterised by a multi-communication channel where unique consumer-focused messages are communicated, through the creation of partnerships, within an environment aimed at offering ease and convenience. Furthermore, the creation of customised business messages in an *always on* environment, functioning to create ease and convenience in the life of the New Consumer, is aligned with the research question pertaining to how business priorities are implemented as a value-added m-business offering due to the fact that it is theoretically established that many organisations are

currently integrating m-business solutions into their existing business structure to ensure that unique messages are communicated via devices that are universally useful. These messages and services are delivered in a ubiquitous environment that offers value to the New Consumer in the New Economy.

M-business has brought about a ubiquitous environment that allows *always on* consumers to function at any time and anywhere. One of the m-business categories that consumers use in this ubiquitous environment is m-commerce. A review of m-commerce as a subsidiary of m-business and how it forms part of e-business but represents the mobile dimension of the virtual business domain of an organisation will be provided. The discussion will deal with the definition of m-commerce with an in-depth analysis of the various elements related to the definition. Furthermore, relevant examples of organisations using m-commerce will be used to illustrate the advantages offered by this m-business model.

CHAPTER 5: MOBILE COMMERCE AS A MOBILE BUSINESS OFFERING

5.1 INTRODUCTION

Mobile telephony, as a form of ICTs, has brought about a financial revolution that has enabled consumers and businesses to break away from traditional models of doing business, and complex transactions and purchases can now be made from anywhere and at any time (Heath & Wingfield, 2002). In support of this statement, Barnes (2002:91) adds that it is increasingly becoming an understatement to say that the Internet and related technologies are changing the way in which people live. Furthermore, Barnes (2002:91) is supported by Goodman (quoted by Barnes, 2002:91) who explains that the convergence of Internet and wireless communication is an issue of the past and many organisations are currently announcing plans for m-commerce enhancements to the business structure.

In view of the adoption of m-commerce enhancements in the business structure, Karvonen and Warsta (2004:171) explain that mobile technology and mobility open up many opportunities for organisations to offer services and make the lives of the New Consumers easier. As emphasised by Junglas (2002:22), New Consumers are willing to carry mobile terminals wherever they go and this has extended their reachability, which has consequently led to many organisations undergoing changes and adapting to serve the New Consumers in the ubiquitous environment in which they function. One of the applications used to create the environment that has been brought about by the New Economy is m-commerce. As highlighted by Elliot and Phillips (2004:3), m-commerce can be considered to be a flexible solution to many of the negative aspects of fixed wired e-commerce and is referred to as mobile e-commerce, which is a component of m-business. Moreover, Glick (2006) explains that consumers and business priorities are coming together in mobile technology, which has led to access to information and communication at any time and anywhere, becoming a selling point and a necessity for companies.

Furthermore, the development of m-commerce has taken place in what is referred to as the three waves of e-commerce (Henderson & Harrison, s.a.). The first wave of e-commerce focused on the physical location of the seller and the buyer, and establishing an electronic way of processing the transaction. As explained by Gillick and Vanderhoof (2000:1), this is referred to as the “brick and mortar” stage with “bricks” referring to the physical location of a business. Furthermore, the second wave of e-commerce focused on the birth of the Internet that became the retail window

(Ohlson, 2002:3). In addition, the third wave of e-commerce refers to the introduction of mobile networks to e-commerce and offers many organisations functioning in the New Economy an opportunity to create a customer value proposition for the consumer. This is referred to as the "click and mortar" stage with "clicks" referring to the virtual storefront (Anon., 2000:1). Businesses functioning in the New Economy have repositioned themselves to compete effectively in a world moving from "bricks and mortar" to "clicks and mortar" (Anon., 2000:1). Furthermore, as explained by Henderson and Harrison (s.a.), the third wave of e-commerce, also referred to as the mobile Internet revolution of the new millennium, is at an embryonic stage but will free the user from the limitations of the fixed network connections and telephone dial-ups, and the growth of this application will take the e-revolution to the next level.

The discussion that follows will deal with m-commerce as a type of m-business. The definition of m-commerce will be discussed and comparisons will be made between m-business and m-commerce. A clear distinction will also be drawn between the definitions of e-commerce and m-commerce and how these different applications function to add value in the organisation. This will be followed by an explanation of the characteristics of m-commerce and how these characteristics add value to the business processes of an organisation.

5.2 M-COMMERCE AS AN M-BUSINESS APPLICATION

Stone *et al.* (2001:1) define m-commerce as the use of wireless digital communication tools within a business structure that includes any value-added transaction or service carried out over a wireless network. This key element of the definition, namely to transact via a wireless network is also emphasised by Durlacher (quoted by Lehner & Watson, 2001:1) and Lam *et al.* (2003:2053) who concur with Stone *et al.* (2001:1) and add that m-commerce entails the processing of a transaction via a mobile telecommunication network. Furthermore, Skiba *et al.* (quoted by Lehner & Watson, 2001:1) Kauffman & Techatassanasoontorn (2001:2) and Rosencrance (2003:4) add to the definition and explain that m-commerce is the use of a mobile handheld device to communicate, inform, transact and use text and data via a high-speed connection to public or private networks. In addition, Kannan *et al.* (2001:2) add to this definition and state that m-commerce facilitates the communication, transaction, sending and receiving of information at any time and anywhere. In summation, the definition of m-commerce is encapsulated in the following key elements:

- Processing a transaction via a wireless network

- The use of a mobile device to communicate, inform and transact
- Communicating, transacting, sending and receiving information at any time and anywhere

Furthermore, m-commerce consists of three different types which are all based on packet-based infrastructure and have a multitude of services that it can be delivered. The three different types of m-commerce are known as (Anon., 2002:2):

1. Soft commerce

   Soft commerce is a type of m-commerce that works on a transactional real-time billing system that includes digital goods and services delivered directly to the individual for immediate consumption. Soft commerce is also referred to by Ding and Unnithan (2005:65) as remote payments that use a browser-based transport infrastructure or an SMS/MMS-based system. Examples of soft commerce include downloadable ring tones, stock quotes and traffic reports and these services require the subscriber to visit a portal and identify the service or product required. The definition of soft commerce provided by Anon. (2002:2) correlates with the definition of m-commerce (Rosencrance, 2003:4) as it refers to the fact that a value-added transaction is processed at any time, irrelevant of the consumer's location. When conducting a soft commerce transaction, the service is selected and the subscriber proceeds to the m-commerce platform that authenticates and authorises the end-user. The charge and authorisation request for payment are then sent to the end-user. The user authorises payment by entering an authorisation code and the platform queries the user for payment choice, i.e. credit card, prepaid balance or any other form of payment. The platform performs authentication, authorisation and accounting, and the requested service is sent to the subscriber and remittance is handled by the m-commerce platform. Soft commerce is currently the most popular Internet application and the primary focus of mobile operators.
2. Hard commerce

   The second type of m-commerce is hard commerce, which refers to a model that focuses on paying for real-time goods and services at the physical point of sale. Ding and Unnithan (2005:65) state that it is also called local payments and that it is characterised by services in the proximity and involves the use of short range messaging protocols. The definition of m-commerce provided by Kannan *et al*. (2001:2) that states that m-commerce facilitates the communication, transactions, sending and receiving of information at any time and anywhere concurs with the postulation of Ding and Unnithan (2005:65) that highlights the facilitation of the sale of goods and services, at any time and anywhere. Furthermore, hard commerce requires an established payment infrastructure that is supported with point-of-sale terminals

and a system that allows the establishment of communication with batch-based payment systems. The hard commerce category can be explained by using the example of paying for dinner. Once the consumers have finished a meal, they indicate to the waiter that the payment method is mobile post-paid invoice and the authentication data is sent to a bluetooth-enabled point-of-sale terminal. The terminal sends a real-time authentication and authorisation for the cost of the meal, and the platform authorises the credit limit and the end-user then needs to authorise the payment.

3. Distance commerce

   The third type of m-commerce is referred to as distance commerce and as the term explains, distance commerce involves the purchase of goods or services delivered later, i.e. purchasing an article or service over the Internet. The payment system used in this model is a well-developed and an existing structure in many developed countries, but is still under-developed in numerous developing countries. The payment system is based on a distance commerce application that can be illustrated as follows: the subscriber is interested in shipping a book in after viewing it online and after choosing a title, the subscriber sends authentication and authorisation and in return receives identity and return shipping information. The merchant sends real-time advice of the cost to the user, which is followed with authorisation from the user for the transaction with a password. The platform then reserves the total amount against the prepaid balance until the book is shipped in, after which the payment is processed through the platform as soon as the book arrives and a referral fee and payment fee, which are both determined by the operator, are subtracted. In many instances, loyalty points are gained for this type of purchase.

In support of the different types of m-commerce discussed, it can further be explained that m-commerce consists of various models that are structured around businesses and consumers. These models determine how these two entities interact. There are three different m-commerce models and these are as follows (Anon., 2002e):

- The business-to-consumer (B2C) m-commerce model can be applied to the area of business to consumer transactions and this model requires the mobile-enabling (m-enabling) of web-based services, allowing the consumer to access data and process transactions while on the move. This arena has the possibility of mobile payments and mobile advertising (Henderson & Harrison, s.a.). Elliot and Phillips (2004:334) add that the main facet of mobile business-to-consumer m-commerce is online shopping and retailing.

- The second m-commerce model is the business-to-business (B2B) model and it focuses on the relationship between business and the trading partners. Furthermore, this model identifies that for business-to-business m-commerce to function effectively, Internet access to standard services that can already be accessed via the web is essential. This is due to the fact that location-based commerce (l-commerce) and timely information become relevant within the business-to-business model. This statement is supported by Elliot and Phillips (2004:331) who postulate that the main use of mobile technology within this context is to coordinate the mobile sales forces and provide them with up-to-the-minute data.
- The consumer-to-consumer (C2C) m-commerce model is based on the transaction that takes place between two individuals and examples include auctions and classified advertisement purchases.

In addition to the various m-commerce models, there are various unique m-commerce characteristics that make it distinct as a mobile application that contributes to the functioning of the New Consumer in the New Economy (Junglas, 2002:8). In order to understand the distinct difference between m-business and m-commerce, a critical evaluation of the characteristics of m-commerce needs to be conducted.

5.3 CHARACTERISTICS OF M-COMMERCE

According to Stolz (2001:1), m-commerce offers the possibility of an entire new level of financial flexibility, taking advantage of recent social and technological developments. Henderson and Harrison (s.a.) concur with this statement and add that new technology such as the mobile Internet will create opportunities for organisations in the New Economy, but it is crucial that the players functioning within this market diversify in order to survive as competition becomes stronger. In addition, Henderson and Harrison (s.a.) as well as Anon. (2001l) add that it is important that the organisation functioning in the New Economy places emphasis on being focused, relevant, location specific and timely as these are all concepts that will become key to the success of m-commerce and it is imperative that they are all delivered in a fast, accurate and secure way. In view of this statement, Glick (2006) highlights that consumers and business priorities are coming together in mobile technology and it has led to access to information and communication at any time and anywhere, becoming a selling point and a necessity that companies have to manage strategically in the New Economy.

Furthermore, Müller-Veerse (2002:8) highlights the attributes of m-commerce applications and mentions that it combines the advantages of mobile communications with existing e-commerce services. In view of this postulation, Xiaojun (2004) highlights that m-commerce is not only another application of e-commerce, but also combines the advantages of mobile communications with existing e-commerce services. As illustrated in Figure 5.3, Müller-Veerse (2002:8) identifies the characteristics of mobile communication, which shows that it is divided into two components of which the first category deals with attributes that describe mobile communication and how it creates the current situation in which the New Consumer is functioning while the second category deals with attributes of mobile communication and explains how it will affect the environment in which the consumer is functioning.

Figure 5.3: Attributes of mobile communication (Müller-Veerse, 2002:8)

Attributes of mobile communication	
Ubiquity	Today
Reachability	
Security	
Convenience	
Localisation	Tomorrow
Instant connectivity	
Personalistion	

In view of the attributes of mobile communication highlighted in Figure 5.3, a discussion of the attributes is necessary to ensure a thorough understanding of m-commerce:

1. Ubiquity

   The first characteristic of mobile communication is the fact that it is ubiquitous and as defined by Durlacher (quoted by Junglas, 2002:22), ubiquity can be described as networks that can fulfil the need for both real-time information and for communication anywhere, independent of the user's location. Furthermore, Junglas (2002:22) identifies ubiquity as one of the characteristics of m-commerce but refers to it as portability and explains that the consumer is empowered with a "one box" device, which is the mobile phone that allows the individual to be an interactive entity that is *always on* and can function effectively from any location. This postulation of Junglas (2002:22) is supported by research conducted by Roland

Berger Consultants (Anon., 2002e) who emphasise that ubiquity offers both increased speed of data transmission and instant connectivity.

As identified by Stone *et al.* (2001:6), Müller-Veerse (2002:22), Roland Berger Research (Anon., 2002e) and Accenture's research report (Anon., 2001h), the ubiquity element forms a core component of the New Economy and contributes to the functionality of the New Consumer. The ubiquity element contributes to the fact that the New Consumer is able to make use of a multi-channel approach to access information and process transactions but has also become device-agnostic and does not have an affinity with a particular device, but will use the device that will process the requisition at the ease and convenience needed by the consumer. As discussed by Stone *et al.* (2001:6), the consumer needs to be exposed to a multi-channel strategy for reasons that may vary from privacy and time constraints to the lack of information. It is also important for that the changing of channels to be possible at all stages of the application or enquiry process to ensure instant connectivity. In addition, the Roland Berger Consultant Research report (Anon., 2002e) explains that the multiplicity of mobile devices means that the consumer can be addressed through various channels and services, and content providers can leverage the specialisation of each device. Moreover, Bührmann (2002:58) is of the opinion that the focus on mobility in the online business will intensify in the coming years. The organisation competing in the global market needs to realise that the product offering should be presented in a multi-channel strategy and organisations need to adapt to the constant changing environment and ensure that niche application takes centre stage. In view of these changes that are taking place in the New Economy, Gates (1999) postulates that the New Consumer needs to function in an environment where business takes place at the speed of thought (Gates, 1999).

2. Reachability

   The second characteristic refers to reachability and is identified by both Junglas (2002:8) and Müller-Veerse (2002:8) as an m-commerce characteristic that is a means by which the mobile user can be in touch and process communication or process transactions for 24 hours a day and seven days a week. Furthermore, Jukic *et al.* (2001) highlights that a mobile network, and inherently the process of m-commerce, is characterised by the ability to maintain communication between non-static locations, which offers the user the advantage of reachability and accessibility. In view of this statement, Junglas (2002:10) argues that one of the advantages is that a "true" any time and any place reachability is possible within the mobile world, but it also offers the mobile user the choice to limit reachability to particular individuals while e-reachability is limited to a computer on a plug-in level within the e-

commerce domain. Furthermore, mobile reachability inherently entails ubiquity and as stated by Müller-Veerse (2002:8), ubiquity is the biggest advantage of a wireless terminal delivering real-time information and communication anywhere and at any time, and independent of the user. In terms of this ubiquity, Glick (2006) explains that consumers and business priorities are coming together in mobile technology, which has led to access to information and communication at any time and anywhere, becoming a selling point and a necessity for companies.

3. Security

   Regardless of the features of wireless devices, there are challenges to be addressed in order for handheld computing devices to be adopted as m-commerce platforms (Lam *et al*., 2003:2054). Security is one major factor that plays a role in the adoption of m-commerce and security mechanisms need to be well studied when deployed in mobile applications (Lam *et al*., 2003:2054). It is a cumbersome and complex process and securing m-commerce may be more difficult than protecting wireless transactions (Anon., 2002i). As stated by Buellingen and Woerter (2004:6), the consciousness of data protection has increased and the introduction of the safe harbour principle clarifies that data protection and the generation of confidence are considered a main condition for the unfolding of e-business processes. However, it is becoming more difficult to offer adequate security to end-users without compromising the ease-of-use and speed of the wireless device, with specific reference to the factors such as constrained bandwidth, low computing power, memory limitations, battery life and various network configurations (Anon., 2002i).

4. Convenience

   As emphasised by Dennis *et al*. (2004:5), convenience is an important characteristic of the New Economy and allows consumers to use various technological devices that enable them to function as an entity that is *always on*. Furthermore, Müller-Veerse (2002:8) emphasises that convenience is an attribute that characterises a mobile terminal and due to the fact that m-commerce is enabled by a mobile terminal, it allows for the storage and processing of data that is always available at hand and is increasingly easy to use. Furthermore, mobile networks enable consumers to be transaction-ready and reduce consumer dial-up delays (Anon., 2000e). As such, Anon. (2001l) emphasises the relevance of customer value proposition in the offering of mobile communication services and reiterates that when driving sustainable value from mobile services, the focus needs to be on the customer.

5. Location-sensitive information

   L-commerce is defined by Gupta (2001b) as location-based technologies that enable the identification of the mobile user in a mobile network and turn the individual into a functional

entity immaterial of the time or place. Furthermore, l-commerce is one of the tools created within the mobile communication industry that offers many advantages to the New Consumer. As emphasised by Dholakia and Dholakia (2002:3), the emergent m-commerce space opens up opportunities for reaching consumers at multiple locations offering real-time customised information. This is supported by Roland Berger Research (Anon., 2002e) that states that the ability to pinpoint a person's geographic position through the mobile device creates opportunities with regard to location-based services. This is a service that will identify the location of the user, and customise information and services according to the consumer location. It also allows for the delivery of local information such as the location of nearby stores, offices and emergency facilities and this is all backed up with connections to wireless Internet websites for information on services, hours and prices (Anon., 2002i:12). Moreover, Jukic *et al*. (2001) emphasise that l-commerce allows for goods and services to be available to the consumer at a fixed and convenient distance all the time.

L-commerce is a phenomenon that is progressively extending from a tool that only delivers information to a tool that is closely integrated with the function of m-commerce. This incorporates the push factor, which means that an organisation or marketer pushes the information through to the consumer rather than the consumer requesting or pulling the information from the marketer or organisation. As highlighted by Stone *et al*. (2001:7), the push factor helps consumers to manage the information and their finances more effectively as the individual becomes aware of new products and services at the most opportune moment. Furthermore, m-commerce and the added-value of the localisation of information have brought about a system in which information can be personalised, causing the mobile device to become a real-time tool (Müller-Veerse, 2002:9).

6. Personalisation

   Another important characteristic of m-commerce is the fact that information and services should be personalised and customised to suit the needs of the New Consumer. In view of this statement, Arthur Andersen Consulting (Stone *et al*., 2001:6) highlights that the "value in wireless data lies in knowing the customer and utilising this knowledge to create revenue streams". This can be done by tailoring mobile service offerings to a specific end-user's requirements. In this way personalisation gives the organisation the opportunity to offer the consumer a unique service based on needs, location and the device used to access the information. According to Watson *et al.* (2002:333), uniqueness means that the consumer will receive information dependent on the time of the day and the people's location, current role or multiplicity of roles as well as their expressed or learned preferences.

In view of the various m-commerce characteristics discussed, Clarke (2001:145) states that for m-commerce to reach its full potential of information available, at any time, anywhere and on any device, organisations must offer the maximum effectiveness and value by leveraging the unmatched advantages of wireless technology. As stated by Clarke (2001:141), m-commerce provides for significant new value areas in ubiquity, location and convenience, and organisations can claim new market space by developing the value proposition of mobility. Furthermore, Figge *et al.* (2002) emphasise that the introduction of mobile data services has led to the creation of value-added services, which has made the use of m-commerce on a large scale feasible by focusing on the millions of already existing mobile device users. Furthermore, it is necessary to elaborate on the statistics of m-commerce to gain a better understanding of the number of consumers utilising m-commerce as a value-adding business application.

5.4 THE STATE OF M-COMMERCE AROUND THE GLOBE

Müller-Veerse (2002:8) reports that m-commerce revenue generated globally in 2005 amounted to US$ 24 billion. Similar to the Müller-Veerse (2002:8) forecast, Frost and Sullivan (quoted by Anon., 2003g) predicted revenues of up to US$24 billion in 2005. The most conservative prediction of m-commerce revenue generated was provided by Consult Hyperion who predicted that m-commerce revenues would reach only US$7,5 billion by 2005 (Anon., 2003g). Furthermore, a forecast was provided by David Kerr from Strategy Analytics Inc. (Anon., 2003m) who stated that "By 2006, 325 million people will generate m-commerce revenues of $230 billion". In support of the statement made by Kerr (Anon., 2003m), Henderson and Harrison (s.a.) are of the opinion that the 21st century has delivered a growth in the wireless market that is predicted to increase steadily until 2007. Celent (Anon., 2006c) predicts that m-commerce revenue will increase to US$55 billion in 2008 and Juniper Research indicates that global m-commerce revenue will escalate up to US$88 billion in 2009 (Anon., 2003g).

Despite the impact that mobile communication has had in the developed world, the rate of adoption and usage in South Africa, as a developing country, is slower, and it is necessary to elaborate on the growth of m-commerce in this country.

5.4.1 M-commerce growth in South Africa

The African continent had a total of 4 900 001 mobile users while only 1,6 million engaged in m-commerce in 2003 (Anon., 2002a:5). South Africa is a unique example of the developing

world and how m-commerce is growing in the country as the number of m-commerce users exceeded the number of e-commerce users by 2003. Ndiaye (2001) explains that this noticeable growth of m-commerce in the country is due to the adoption of the mobile phone. In October 2003, research indicated that South Africa had a total of 14,4 million mobile users and it was estimated that 80% of these users were active users (Anon., 2003c). This indicates growth from 2001 as a study conducted by Trialogue in 2001 showed that there were about 9 million mobile devices (mobile phones) in use in South Africa at the time (2001:256). This statement is supported by Wilson (quoted by Bührmann, 2002:59) who adds that research completed by Cahners In-Stat Group recorded 18% penetration of mobile devices in the South African market in the same year. This grew to 32% penetration in 2005 and 19 million users by 2006 (Anon., 2003c). Goldstuck (2004) concurs and emphasises that m-commerce revenues increased from R50 million in 2000 to R2 billion in 2004. Goldstuck (2004) also adds that "market maturity is at least three years away, with full-blown mobile commerce across numerous categories, from event and travel tickets to paying for fines and parking, only likely to be fully main stream by 2010".

In view of the speedy adoption of mobile technology in South Africa, the African continent is currently experiencing leapfrogging (Anon., 2004l), which is a concept that was first articulated by Alexander Gerschenkron in 1962 and the term refers to “the notion that areas which have poorly-developed technology or economic bases can move themselves forward rapidly through the adoption of modern systems without going through the intermediary steps” (Cascio, 2004). This means that the developing regions can experiment with emerging tools, models and ideas for building this society (Anon., 2004l). Furthermore, Cascio (2004) postulates that the best known example of leapfrogging is the adoption of mobile phones in the developing world as adequate infrastructure for fixed-line connections has not been established. In view of the concept of leapfrogging, Goldstuck (2004) argues that m-commerce will develop in South Africa but that it will not happen overnight.

In view of the adoption rate of m-commerce in South Africa, Gupta (2001a) highlights that there are various general impediments, including technological and financial problems. The impediments to the growth of m-commerce are as follows:

- As explained by Keen and Mackintosh (2001:51), wireless operators over-hyped WAP and in so doing built expectations that could not be met. Consequently, this has led to technophobia as consumers experienced difficulty with applications and could not operate tools efficiently.

This has culminated in the slow acceptance of WAP, which has been an impediment to the growth of m-commerce.

- M-commerce is not secure because of the basic characteristics of wireless as a communication medium and the immaturity of wireless technology (Keen & Mackintosh, 2001:194). For security reasons, many consumers have major concerns when conducting a high value transaction.
- M-commerce is conducted over a wireless device that usually has a small screen size, which leads to poor navigation when visiting a website. Furthermore, this device does not offer the consumer the use of a mouse or a full-sized keyboard.
- As explained by the BBC News, the first mobile phone virus, called Cabir, was already created in 2004, which is contributing to the consumer's fear with regard to using the mobile device for transaction purposes as it means that this device is connected to the wireless Internet and exposed to the risk of being contaminated with a virus (Anon., 2004q).
- As explained by LightSurf, a technology company focusing on multimedia messaging technology (Anon., 2005k), there is some reluctance by consumers to upgrade their mobile handset to a more capable phone and wireless service. This is due to the expense that needs to be incurred when signing a new contract with a network operator to obtain a newer system.
- As emphasised by the WAP Forum (Anon., 2000g), a mobile solution must add significant value to the New Consumer's life at a low cost and many consumers are uncertain about the costs involved with various enabling m-commerce technologies, which could have an impact on the adoption of the application.

Taking into consideration the general impediments that limit the growth of m-commerce, there are numerous other influencing factors that contribute to the low adoption rate of m-commerce as a mobile application in South Africa. The following section will discuss the functionality requirements that are needed to process successful m-commerce transactions. This section will also elaborate on the enablers of m-commerce and the security systems integrated in it.

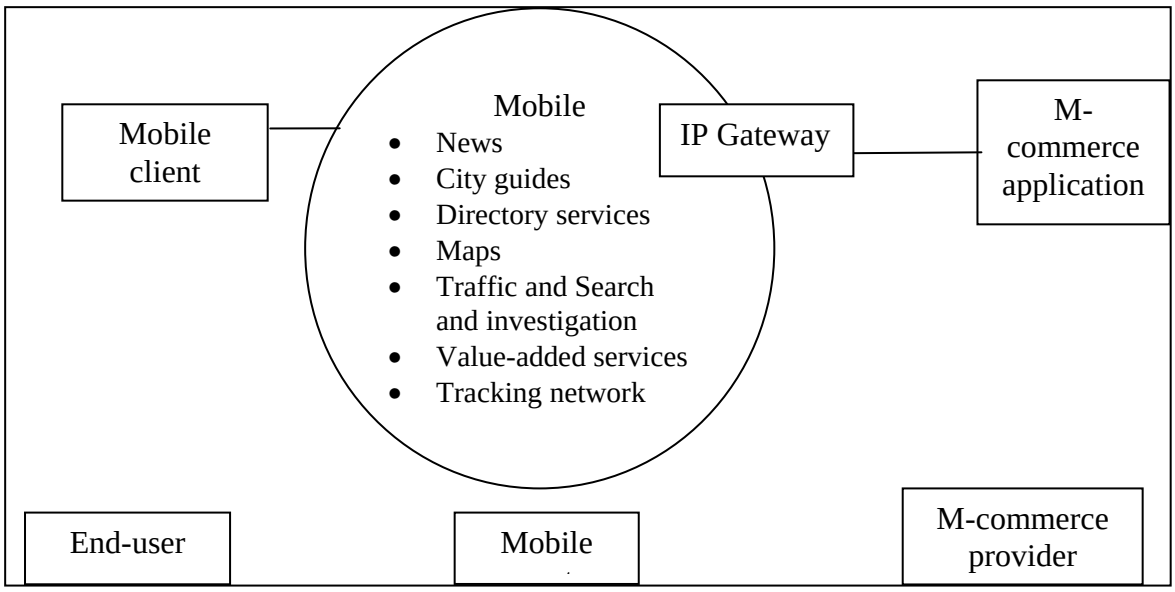
5.5 M-COMMERCE ARCHITECTURE

Lam *et al.* (2003:2053) offer an overview of m-commerce architecture and explain how important it is for the security mechanism, suitable for mobile handset devices and secure enough to protect wireless transactions, to be imbedded in this system. Furthermore, Raschke and Kelly (2002:2) state that security is no longer a value-added feature, but a core requirement

for conducting business and with the advent of the Internet and increasing mobility, security is becoming even more of a priority for financial institutions as wireless services are a natural extension of financial institutions' online offerings, allowing retail and commercial customers to access innovative, personalised services at their convenience. When discussing security enablers, it is important to take into consideration that m-commerce can currently take place via two wireless channels, namely the mobile phone network or wireless Local Area Network (LAN) (Lam *et al*., 2003:2053).

In view of the m-commerce service that needs to be delivered to consumers, Hamilton (2001) explains that organisations that are not developing the internal capacity to deliver m-commerce themselves are forming partnerships to provide this value-added service. Kumar and Zahn (2002) and Woolfall (2003) concur and emphasise that creating partnerships when delivering m-commerce is essential as they ensure that value is created. As illustrated by Lam *et al*. (2003:2053) in Figure 5.5, the process of m-commerce with the various partners included, also referred to as m-commerce architecture, entails three parties that are important partners in the m-commerce process. These parties are the end-user, the mobile network and the m-commerce provider.

Figure 5.5: Overview of mobile commerce architecture (Lam *et al*., 2003:2053)



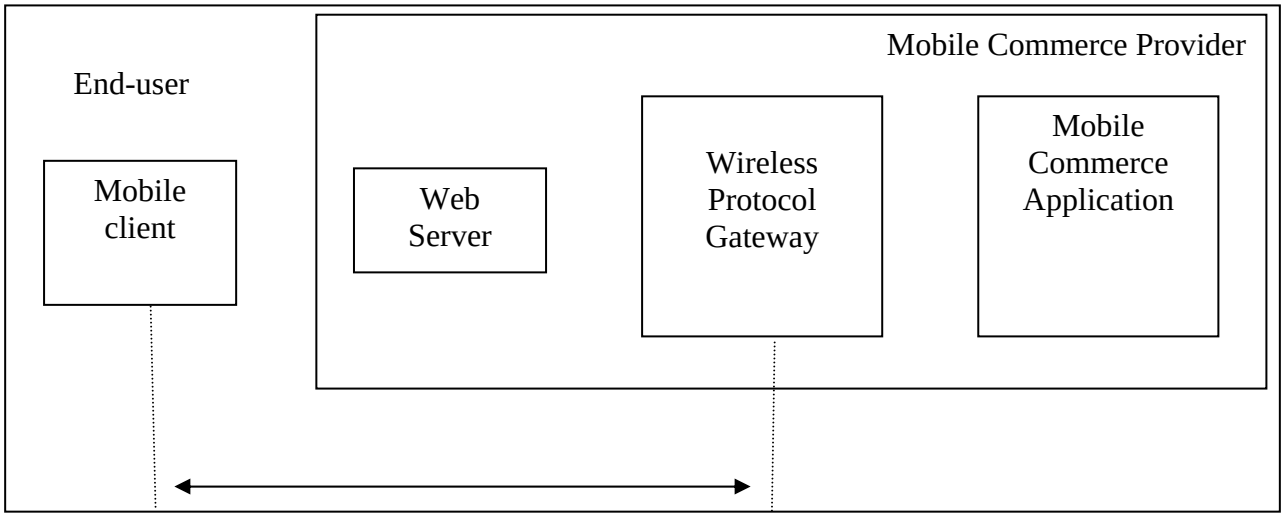
As illustrated in Figure 5.5, an end-user will connect to the m-commerce provider through a mobile phone network where m-commerce takes place. The mobile network operator provides Internet connectivity, which enables m-commerce by means of an Internet protocol (IP) Gateway. Furthermore, the m-commerce provider connects to the mobile operator and likewise

the end-user connects to the mobile phone operator, through the Internet. Services such as the news, city guides, directory services, maps, traffic and search and/or investigation, value-added services and tracking network can be provided. As shown in Figure 5.5, the m-commerce provider does not have to handle the wireless connectivity but its main focus is on the application architecture that caters for the characteristics of the handheld devices. In addition, it should be noted that the support of handheld devices as a transaction platform, used by end-users, is another major factor that defines the mobility of an e-commerce system.

In view of the illustration contained in Figure 5.5, Lam *et al*. (2003:2055) postulate that lightweight security mechanisms are needed to protect m-commerce transactions due to the resource constraints of mobile computing platforms. Furthermore, this is highlighted by Oasis (Anon., 2000e) who states that security is not only a barrier to Internet purchases and online financial management, but is also a foremost concern in a wireless environment. Security standards continue to play a role in swaying consumers' confidence in m-commerce and downplaying the omnipresent fear of fraud. As mentioned by Raina and Harsh (2002:167), there are various causes of poor security when delivering m-commerce as a service including technological problems and errors as well as the human element as confidential information in the organisational structure can be shared within social structures in conversations or due to bribery.

In addition to the model illustrated in Figure 5.5 and developed by Lam *et al.* (2003:2054), this author acknowledges that it is imperative for security mechanisms to be embedded in the process to ensure that transactions are processed successfully. Lam *et al.* (2003:2054) have developed two other models that elaborate on the IP Gateway component of the first m-commerce architecture model developed. As illustrated in Figure 5.5.1a, Lam *et al.* (2003:2054) illustrate how m-commerce was improved with the introduction of a Wireless Protocol Gateway, which is a fixed-line agent for handheld devices.

Figure 5.5.1a: System architecture of secure m-commerce applications (Lam *et al*., 2003:2054)



The Wireless Protocol Gateway enables the handheld device to connect to the application server indirectly through the gateway server. In addition, the end-user is authenticated to the gateway server through a simplistic password login, and the gateway server in turn executes transaction protocols on behalf of the handheld device (Lam *et al*., 2003:2054). This is the most basic framework for implementing security for m-commerce transactions.

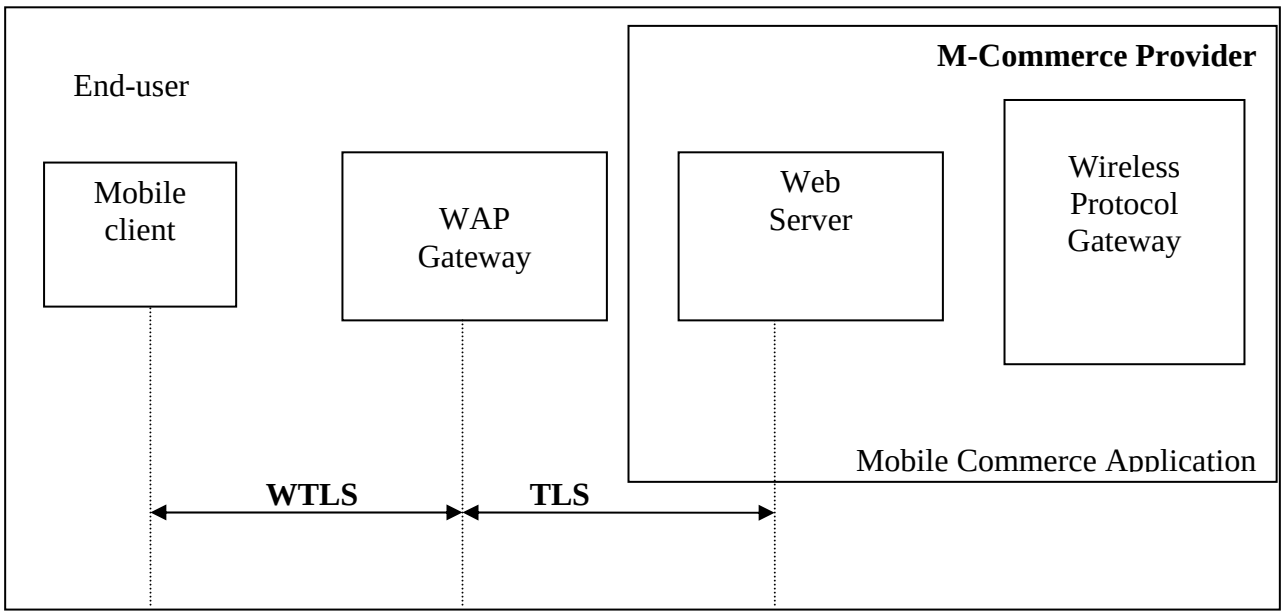
In view of the m-commerce architecture model developed by Lam *et al*. (2003:2053), there are certain standard protocols, functional within the Wireless Protocol Gateway, that ensure access to Wireless Markup-Language (WML)-based applications that make mobile information delivery possible (Anon., 2005i). These two standard protocols are WAP and Wireless Internet Gateway (WIG), and a discussion on these protocols is necessary as security enablers are needed to explain how these protocols are integrated in m-commerce architecture.

5.5.1 WAP as a security enabler

As illustrated in Figure 5.5.1b, a protocol gateway called the WAP gateway was developed to provide connectivity between a WAP-based handheld device and the application web server (Lam *et al*., 2003:2054). WAP is defined as a standardised protocol that allows a mobile phone to retrieve information from the Internet via a server installed on the mobile phone network (Anon., 2001k). Similarly, Raina and Harsh (2002:74) define it as a global standard for the presentation and delivery of information and telephony services to mobile devices. As such, WAP is a leading global standard for delivering information over wireless devices (Anon., 2004h). In support of this, Elliot and Phillips (2004:116) argue that the best approach to an integrated, accessible and easily maintainable mobile systems architecture is to build information

systems using open standards in the computing and telecommunications domain together with the open WAP standard for telecommunications. When using the security model illustrated in Figure 5.5.1b, the wireless handheld device should adopt the WAP technology and secure e-commerce transactions using Wireless Transport Layer Security (WTLS). WTLS is the ready security mechanism that protects the connection between the handheld device and the gateway server. As illustrated by Lam *et al*. (2003:2055), the WAP gateway is positioned outside the component of the m-commerce provider, which can be hosted technically by the mobile operator or mobile service provider but due to costs, the WAP Gateway is typically hosted by a mobile operator. In support of the WAP-based system architecture, there are two major concerns with regard to security. Firstly, a security gap is created at the WAP gateway, which means that the mobile transaction data is exposed at the WAP gateway as the WTLS data is decrypted and is once again encrypted as Transport Layer Security (TLS) traffic. Secondly, as stated by Lam *et al.* (2003:2055), protected traffic ends at the web server and thereafter transaction data exists in clear form, which means that it does not satisfy the end-to-end security requirement even with the provision of TLS protection of data starting from the handheld device in future WAP versions.

Figure 5.5.1b: WAP-based system architecture of m-commerce applications (Lam *et al.*, 2003:2055)

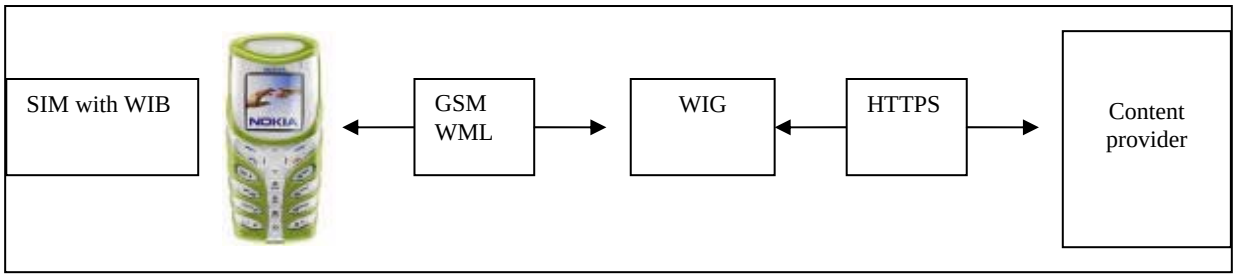


As established, the second protocol type is called WIG and is another tool that is used to process m-commerce transactions. It is important for the differences between the two standard protocols to be discussed and how both these tools enable the process of a secure transaction within mobile space.

5.5.2 WIG as a security enabler

WIG brings WAP to terminals via SMS and supports end-to-end security, push and location-based services (Anon., 2005i). As explained by Van der Merwe (2003:85), WIG opens up a channel to the wireless Internet browser on the Subscriber Identity Module (SIM) card. Furthermore, WIG enables the use of an easy-to-use application language, called the WML, for implementing SIM Application Toolkit (STK)-based mobile services. The messages processed are processed by means of SMS. Moreover, Van der Merwe (2003:86) is of the opinion that WIG architecture in its simplest form is very basic in nature. As illustrated in Figure 5.5.1c, the WIG converts WML messages that are sent from a mobile device enabled with a Wireless Internet Browser (WIB), to a web-based protocol such as HTTP or HTTPS, if security is required, and then forwards it to the content provider.

Figure 5.5.2: The WIG architecture (Van der Merwe, 2003:86)



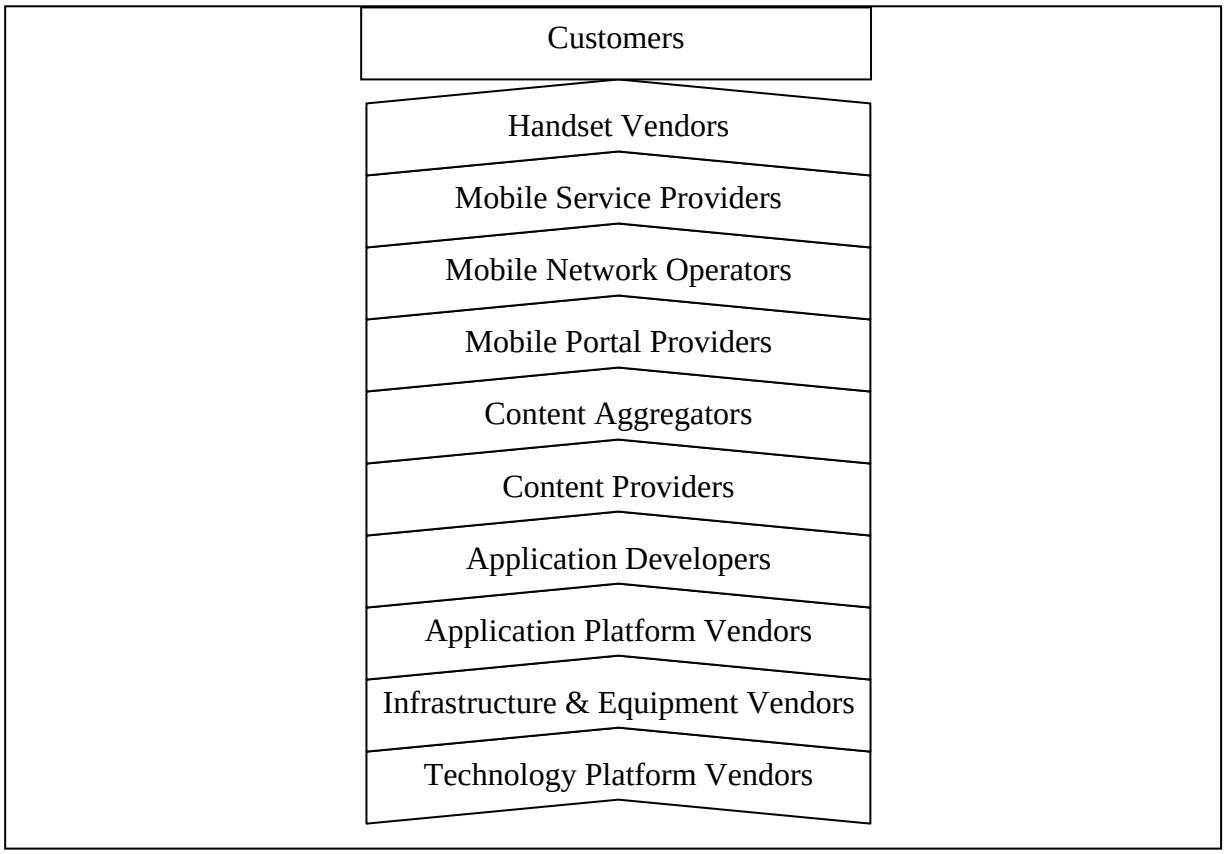
In view of the various architectural issues discussed, m-commerce facilitators need to understand the business drivers and the value that can be delivered to the New Consumer (Raina & Harsh, 2002:28). Furthermore, Raina and Harsh (2002:28) add that the m-commerce cycle can occur only if all its supporting parts are working together as a value chain.

5.6 M-COMMERCE VALUE CHAIN

The primary existence of companies is based on the value increase that organisations offer to consumers utilising a product or service (Karvonen & Warsta, 2004:171). Correspondingly, Barnes (2002:93) argues that the m-commerce value chain involves the consumer at every level. Datta *et al.* (2001:72) support this postulation and add that a business can create value for a consumer in two ways, namely directly, by enhancing benefits to customers or reducing costs for participants, or indirectly, by increasing cross-selling, cutting the cost of acquiring customers or reducing customer churn. The indirect value is only available to providers who come first to market with a given service or who have assets or capabilities that are distinctive enough to retain share once competitors have entered the market.

In view of the value delivered to the consumer when offering m-commerce, an m-commerce value chain has been developed by Müller-Veerse (2002:15) and, as depicted in Figure 5.6, it consists of a number of partnerships that contribute to the creation of value.

Figure 5.6: The Mobile Commerce value chain (Müller-Veerse, 2002:15)



Müller-Veerse (2002:15) illustrates the relevance of the consumer in the process and how the process starts with technology platform vendors and ends with handset vendors before the interference of the consumer. Furthermore, it is necessary to understand how the various partners in the m-commerce value chain contribute to the process of value creation and this is done in the following ways (Müller-Veerse, 2002:15):

- The technology platform vendors are one of the partners in the m-commerce value chain who deliver the operating systems and micro-browsers for mobile devices. Micro-browsers perform the same function for web communication, but browsers such as Netscape and Internet Explorer have been customised specifically for the mobile environment. Barnes (2002:94) has also developed an m-commerce value chain and refers to the technology platform vendor component as mobile interface and applications. Barnes (2002:94)

elaborates that this partner is responsible for the development of an application interface for the m-commerce user.

- Another partner in the m-commerce value chain is the infrastructure and equipment vendors such as Motorola, Ericsson, Siemens and Nokia and these organisations have developed solutions for mobile data and the mobile Internet and thus m-commerce. The infrastructure and equipment vendors place emphasis on developments such as WAP and GPRS as they determine the speed and type of innovation that can be delivered to the consumer. Barnes (2002:93) refers to this component as the mobile services and delivery support component of the m-commerce value chain.
- Application platform vendors refer to the construction of middleware infrastructure such as WAP gateways at either the mobile network operator's site or the corporate customer's site. As explained by Barnes (2002:93), this component refers to the mobile interface and application component of the value chain as it offers an interface and application that enable m-commerce.
- Applications for the mobile environment are primarily built on Windows CE or PalmOS technology platforms. Currently, most of these applications are used off-line rather than via the mobile network. Barnes (2002:93) also refers to this as the mobile interface and applications component of the value chain.
- Content providers are one of the most important partners in the process of m-commerce and these entities use a variety of distribution channels for products that are delivered. Furthermore, charging for content is one important issue in the world of m-commerce and currently the easiest way entails creating revenue for mobile information providers by taking a share of the call revenue. Barnes (2002:93) emphasises this element and refers to it as the content creation component of the value chain highlighting that content on the wireless Internet may include text, e.g. news, stock prices, film listings, advertisements and restaurant locations. It can also include audio, which refers to voice, wireless Internet radio and music files, including MP3 format and graphics such as wireless bitmaps or Graphics Interchange Format (GIF) formats. The last format that can be found in content is video, which refers to animated graphic files, wireless TV and video files.
- The content aggregator is a relatively new partner to the m-commerce value chain and refers to the entity that repackages available data for distribution to wireless devices. This component is also acknowledged by Barnes (2002:93) and is referred to as content packaging. Barnes (2002:100) is of the opinion that digital content must be transmuted, edited, customised or combined to provide consumable content for the user. Furthermore, value is added through the reconfiguration of data into the most appropriate package for user

consumption, e.g. mobile sites that use a WAP forum and can deliver content such as sports news, online games, finance, entertainment, news, shopping and travel.

- According to Müller-Veerse (2002:16), mobile portals are formed by aggregating application such as email, calendar and instant messaging and content from various providers in order to become the user's prime supplier for web-based information that is delivered to the mobile device. Barnes (2002:93) refers to this element as market making and incorporates mobile portals (m-portals) that play a key role in business-to-consumer markets. A portal is defined as a doorway or gate that is a high-level information and service aggregator. Mobile portals are also known as an intermediary that provides a powerful role in access to the mobile Internet (Chircu & Kauffman, 2001 quoted by Barnes, 2002:101). The provision of customised information is the main aim and according to Tsalgatidou and Veijalainen (2000) as well as Müller-Veerse (2002:17), mobile portals are characterised by a greater degree of customisation and personalisation than standard Web-based portals. These include communication, personalised content and alerts as well as Personal Information Management (PIM). The catalysts that have played a major role in developing subscriber databases to support customer-relationship include mobile operators, technology vendors and traditional web-portals.
- Mobile network operators, also referred to by Barnes (2002:93) as the mobile transport component, and mobile services and delivery support, refer to the service providers and these parties are best positioned to benefit from the introduction of m-commerce services as they already own a billing relationship with the consumer and they control the portal that is pre-set on the SIM card when it is distributed.
- Mobile service providers are one element in the m-commerce value chain that functions as an intermediary for the faster marketing and sales of mobile phone contracts and terminals. The service provider has a relationship with the customer due to billing, but does not own any infrastructure. The mobile service provider is buying the services and reselling it under their own brand. The mobile network operator determines the functionality of services and then the information that appears on the screen. Barnes (2002:93) refers to this component as the mobile transport component, mobile services and delivery support. Furthermore, Barnes (2002:93) elaborates that this element is also referred to as the infrastructure and equipment vendor as the mobile service provider is in the position to offer m-commerce applications by charging goods and services directly to the phone bill, if the network operator has made provision for this.
- The final partner in the m-commerce value chain is the handset vendor and this party is critical in the value chain as consumers do not shop for a mobile service provider brand but

for a handset brand. Currently, mobile phone manufacturers are becoming more like PDA manufacturers as many offer smart phones with communicator functionality.

- The final component in the m-commerce value chain refers to the consumer and this component forms the core component in the m-commerce value chain. According to Müller-Veerse (2002:18), a study conducted by Nokia on mobile value-added services (VAS) showed that the primary target markets for m-commerce consumer services are teenagers up to 18 years, students (19-25-year-olds) and young business people (25-36-year-olds).

In view of the m-commerce value chain discussed, it is important to highlight the different applications of m-commerce that function to add customer value proposition. M-commerce applications refer to the various m-commerce tools that exist and include mobile financial services such as mobile-banking (m-banking), mobile advertising, mobile information provisioning such as sports news, financial news, entertainment news, travel information, mobile music, mobile video, mobile gaming and mobile betting (Müller-Veerse, 2002:40; Charles *et al*., 2000:10; Anon., 2002i).

5.7 M-COMMERCE APPLICATIONS

As highlighted by Buellingen and Woerter (2004:7) as well as Müller-Veerse (2002:40), m-commerce is a particularly meaningful application field. In support of these different applications identified by Charles *et al.* (2000:10) and Müller-Veerse (2002:40), Gillick and Vanderhoof (2000) state that organisations search for what is called the "killer application", which is the application that is so compelling that it shapes the industry. Similar to the consumer applications such as m-banking, m-advertising, m-news and m-gaming, there are a number of business m-commerce applications that ensure that value is created for businesses.

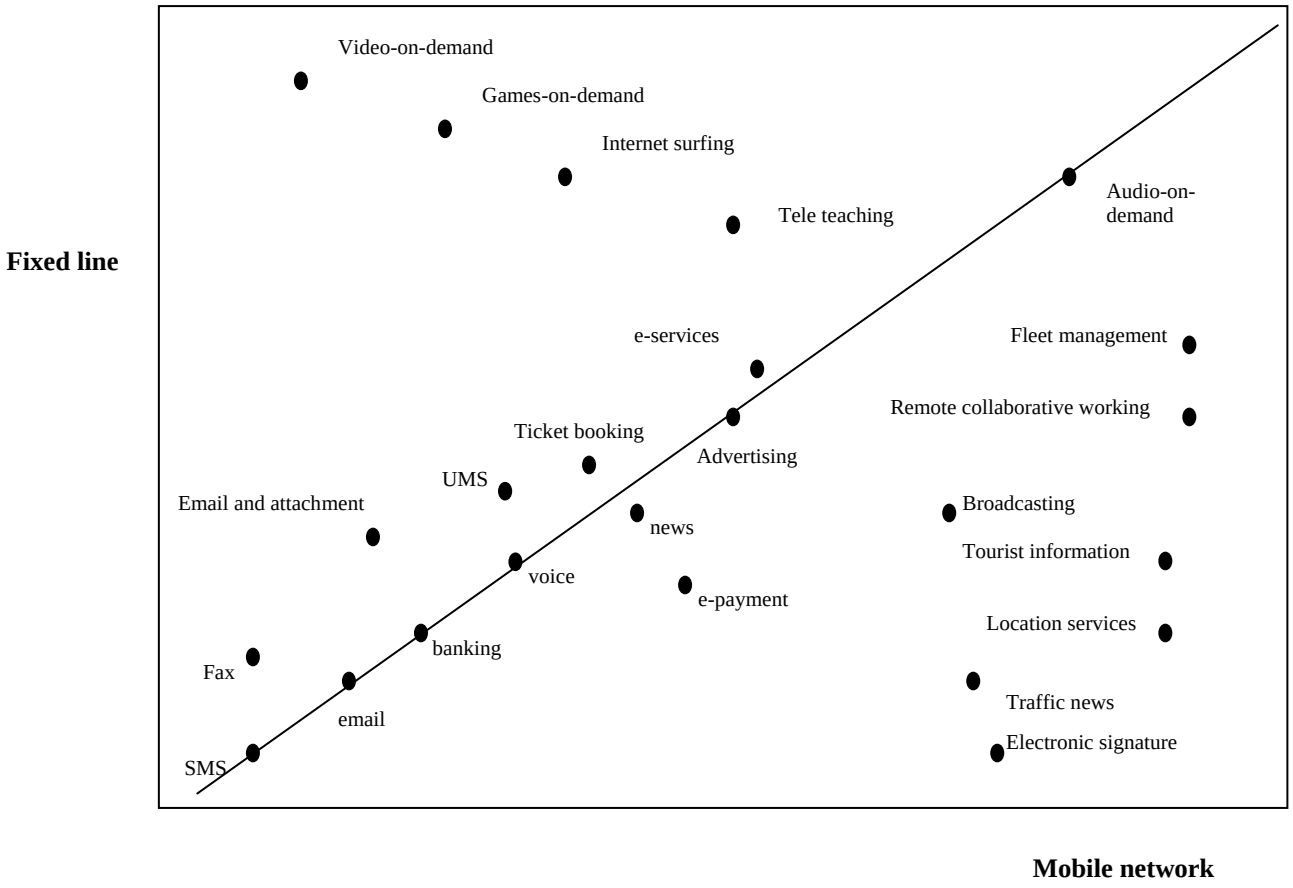
In view of the different m-commerce applications, a report published by the Thought Leadership Forum (Anon., 2001i:1) states that financial services have been early adopters of m-commerce due to the time and location sensitivity of mobile devices and networks as well as the value that it creates. This is reiterated by BitFlash Incorporated (Anon., 200ll:1) who state that financial institutions are notorious early adopters of new technology and the reason may be that these users understand the return on investment. Nobel (2000) corroborates with this statement and adds that financial services companies continue to "out space" every other industry in wireless application development. Ayadi (s.a.) concurs and states that m-banking, as a mobile financial service, is considered to be one of the most value-added and important mobile services available.

In support of Ayadi (s.a.), a report compiled by Synchrologic (Anon., 2002r:4) adds that financial institutions are increasingly viewing mobile computing as a critical source of competitive advantage. Moreover, the second reason for m-commerce adoption, within the financial services industry, is that the consumer is given the opportunity to do simple financial transactions while being engaged in another activity. Taking into account the growth in the adoption rate of m-commerce in the financial industry, the IDC forecasts that 4,6% of the total Western Europe population will access financial services and information via a mobile connection by the end of 2007 (Anon., 2003g). These mobile financial services refer to a number of sub-categories, including m-banking, mobile brokering, mobile cash, mobile payment, mobile e-bill and mobile e-salary.

5.7.1 Mobile banking

Mobile banking (m-banking) is a subset of online banking and refers to various technologies that include mainly the Internet as well as voice and cellular services (Schmidt, 2002). As described by Charles *et al.* (2000:11), m-commerce takes the Internet one step further by allowing users to manage personal finances securely online from any location. This is supported by Oasis Technology (Anon., 2000e) who states that most major banks offer Internet banking as an extension of the existing variety of services and convenience, and wireless is seen as the next step in the process of evolution. In view of wireless being the next step in the process of evolution, m-banking offers the New Consumer banking that is available at any time and anywhere from *always on* mobile devices like mobile phones and personal digital assistants (PDAs). Banks using the m-commerce application to deliver a service can send static account information to wireless devices and an increasing number of banks are allowing customers to transact over the mobile Internet (2002i). Charles *et al.* (2000:11) concur and add that m-banking enables customers to access their accounts, pay bills, make transfers and receive reminders or payment advice using a mobile device. Furthermore, Schmidt (2002) highlights that technology seldom drives a market but the value-add created by services that are delivered by the delivery mechanism or technology can increase penetration and adoption. In view of the adoption of m-banking, it can be deduced from the illustration contained in Figure 5.7.1 that the New Consumer is currently neither developing an affinity to fixed line nor to mobile networks when m-banking is processed as Buellingen and Woerter (2004:1407) illustrate that the same number of people who show an affinity to banking using a fixed line show an affinity to banking using a mobile network.

Figure 5.7.1: Affinity of telecommunication services to fixed line or mobile network (Buellingen & Woerter, 2004:1407)



As illustrated in Figure 5.7.1, SMSs, and email, advertising and audio-on-demand are all communication tools and applications that are accessed as often on a fixed line as they are accessed via a mobile network. In comparison, services such as traffic news, location services, tourist information as well as fleet management are all communication tools and applications that are more likely to be accessed via a mobile network. In view of the fact that consumers show no preference for m-banking via fixed line networks and mobile networks, it is necessary to elaborate on the history of m-banking to highlight how this affinity was brought about.

5.7.2 The history of m-banking

M-banking started in 1992 in Scandinavia with MeritaNordbanken and this institution allowed consumers to make bill payments via GSM and later the service developed into an SMS-based balance checking and transaction system by 1997 (Müller-Veerse, 2002:41). This was followed by the launch of a commercial WAP banking service by the same bank, with the arrival of WAP phones in October 1999 and this was done in partnership with Nokia after an eight-month trial period. Similarly, Barclay's card customers in the United Kingdom have been conducting m-

banking since 1997 as offered by Barclay's Bank and Cellnet. The 150 000 customers who subscribed to this service were given a special handset with a bank direct dial "Barclay button" that allowed users to receive mini-statements, and check credit card limits, balances and next payment days (Müller-Veerse, 2002:41). Furthermore, Deutsche Bank followed the same route and decided to use WAP with Nokia as the full-solution provider. Another bank that did the same is Svenska Handelsbanken, which teamed up with IBM to launch a WAP-based m-banking service in the first quarter of 2001. In view of the examples given, the emphasis on partnerships in m-commerce is reiterated when the example is considered of the mobile operator Tele2 that launched a service with the National Payments Centre in Latvia (Anon., 2000o) and the system used the bank's direct debit system, which entails the user receiving an SMS about a bill and by sending a reply, the bill is paid. In addition, Scandinavia is a leader in combining financial services and mobile phones, and Mobil Smart is one project that illustrates this. Mobil Smart, a service rendered by the Swedish Postal Bank (Postbanken) and Telia, allows customers to make payments from their handsets. Another example is that of Citibank, which offers an m-banking service in Singapore where customers can access their account balances, pay bills and transfer funds using SMSs (Birch, 1999). ICICI (in India) is another example of a bank that has launched an m-banking service to customers, including online balance updates, cheque book requests, details of the last five transactions, statement requests and verification details (Charles *et al.*, 2001).

In view of the major adoption of m-banking by financial institutions, Müller-Veerse (2002:40) highlights that m-banking is a service that was offered by 94% of all banks in Europe in 1999 and as argued by Ghani (2001), m-commerce is currently revolutionising the financial industry. Birch (1999) supports this statement and argues that the growth of m-banking has largely been due to prepaid services. The impact of prepaid services becomes apparent when it is considered that a total of 50% of Portuguese mobile phone customers are anonymous prepaid subscribers who use ATM bill payment facilities to reload the mobile phones for more talk time (Birch, 1999). Furthermore, prepaid services have been the catalyst for increasing mobile rates in recent years throughout the world. An example of this refers to 2001 where global wireless subscribers grew by 28% to more than 940 million subscribers, 40% of whom were prepaid users (Anon., 2002j). Moreover, the advantages of the prepaid services are that they provide telecommunication companies with the security of establishing revenue even before the services are rendered, which helps to cut costs, personnel expenses and non-payment risks (Anon., 2002j).

In comparison with the argument that m-commerce is revolutionising the financial industry (Ghani, 2001), there are authors who are of the opinion that the m-banking explosion has not yet taken place and address it as "the past and current flop of m-banking" (Anon., 2003k). Schmidt (2002) concurs and claims that the uptake of m-banking is "currently dismal". This sentiment is supported by Atkins (quoted by Anon., 2004j) who postulates that although mobile banking services might appear to hold significant advantages as an e-payment method, the development of this application has not delivered on the consumer's expectations. This is largely due to the limitations of WAP-enabled handsets, slow data transfer speeds and fragmented mobile data standards (Anon., s.a.). This statement is also reiterated by research conducted by Trialogue (Anon., 2004e:156) that shows that m-banking is a distant third to ATM and Internet banking and this is due to the small screen, the cumbersome keyboard and relatively slow connection.

In comparison with the opinion of Schmidt (2002), who states that the uptake of m-banking is currently dismal, Atkins (quoted by Anon., 2004k) argues that m-banking has developed significantly in South-east Asia, Japan, South Korea and Singapore. Similarly, Europe is experiencing growth and the Nordic region is the most advanced with Finland's Mobile Cash project operating successfully (Anon., 2004k). Similar to the growth that m-commerce is experiencing in Europe and Asia, South Africa has shown a percentage increase in m-banking users between 2003 and 2004 and these figures represented more than 10% of the total online banking user base in 2004 (Anon., 2004e:157). In view of the growth of m-commerce experienced in South Africa, Ayob, the MD of Cointel (Anon., 2001j), states that "The reality is that m-commerce is here, and it's alive and working well". Cointel is an easy-to-use system for charging prepaid mobile accounts to mobile phones and this service already had a monthly income of R50 million in January 2001. Cointel is an m-commerce initiative that has taken the "mantle of trailblazers" and m-commerce to New Consumers with the major portion of the company's income coming from Soweto in South Africa (Anon., 2001j). Similarly, MasterCard Southern Africa has joined with Simplus to develop an m-commerce solution that had generated over US$250 turnover in 2003 (Anon., 2004j). This m-commerce solution is called "re-Power" and allows consumers through service providers and vendors to conduct secure payment transactions using the mobile phone. This solution has been developed specifically for the millions of South Africans who do not have a bank account, as it is a reality that more South Africans own a cellphone than have a bank account (Anon., 2004j). This solution was designed to integrate with various mobile network operators and in partnership with MasterCard's member financial organisations in South Africa (Anon., 2004j). Following the growth of the "rePower" initiative, Soweto is coined the "m-commerce capital of Africa" (Anon., 2004j). The

success of this initiative is largely due to the use of the service in townships, with the platform being GSM payphone owners. GSM payphone owners are people who set up on street corners and sell units to others wanting to make phone calls. Unbanked GSM payphone owners make a payment to the mobile phone operators through prepaid credit cards issued by MasterCard (Anon., 2004j). In view of the Simplus example, Byrne (quoted by Anon., 2004j) is of the opinion that it is possible to do "m-commerce without turning a cellphone into a web browser, or needing any special devices" by focusing on the key customer needs of m-commerce rather than the technology. Mastercard Southern Africa and Simplus reported a turnover of R1,6 billion in their first year of operation, mostly through the sale of prepaid cellular time. This m-commerce offering gives consumers the convenience of buying airtime directly from their mobile phone and reduces traditional security risks associated with vouchers.

In view of the fact that m-commerce can be delivered on both a prepaid and post-paid system, the application can be deployed in a simplistic manner as it only requires a private information service, SIM Toolkit or WAP support and security (Müller-Veerse, 2002:41). M-banking solutions are primarily pull strategy-based, meaning that information is given by consumers via a voice call to an Interactive Voice Response (IVR) system or via an SMS request. In addition, one of the major obstacles to effective m-commerce and m-banking usage is the mobile device. As emphasised by Frost (2004), the size of the device as well as keyboard size and screen complicate the process. This sentiment is supported by BitFlash (Anon., 2001i:4) who states that there are challenges when implementing graphically rich content on any mobile device on any wireless network. These challenges include the following (Anon., 2001i:4):

- The screen size, memory capabilities as well as colour resolution and depth play a major role and it is relevant to maximise the effectiveness and efficiency of existing financial services taking the aforementioned obstacles into account.
- Numerous incompatible wireless networks already exist and include technologies such as 3G, GSM, GPRS and many more. It is imperative for the financial industry specifically to adopt wireless solutions that are network agnostic, which means that one application can effectively run on all existing wireless infrastructures, including packet-switched and circuit-switched networks.
- It is crucial for the most effective wireless standards to be integrated and this should be a standard that best fits the customer's need and not only on the wireless device but also on the desktop. Standards include concepts such as WAP or iMode. As highlighted by Raina and Harsh (2002:268), WAP is now gradually taking over as a higher and more consistent

> standard and the WAP standard adopted by Nokia, Ericsson, Motorola and most other players in the market are supported by the majority of mobile networks on a global scale. In support of this statement, Jonathan Craig, the marketing vice-president of Charles Schwab, states that "People are not going to go out and buy a new mobile phone just to use your service." (Anon., 2000f.)

In view of the discussion pertaining to m-banking technology, Raina and Harsh (2002:260) argue that the financial sector, as a service industry, has always been on the cutting edge of technology. The mobile sector of the financial industry has led to an additional set of security issues. This is complicated as security becomes a challenge because product variations and revisions change constantly from one financial institution to another. The relevance of security being unique within the mobile banking sector calls for an elaboration on this issue.

5.7.3 Security pertaining specifically to m-banking

In view of the discussion pertaining to m-banking and the security thereof, the statement made by Shi (2004:18) emphasises that "In order for mobile business to continue to grow, technical issues such as device limitations, usability, standardisation and integration of different wireless technologies must be addressed.". Various banks are addressing technical issues, of which security is an integrated component, and increased online security measures. An example hereof is Standard Bank in South Africa that offers free anti-virus software and firewalls to its online customers, while First National Bank, also in South Africa, introduced a single-use PIN code providing for each banking session using its DigiTag product (Anon., 2004e:155). The entrenchment of e-banking technologies within the banking infrastructure has meant that many times the bank knows that a problem has occurred before the customer (Anon., 2004e:155). With regard to the use of the technology such as the DigiTag product, Ghani (2001) argues that double key secure authentication is one of the protection methods used to verify access across different systems. Double key security means that the user must authenticate two systems, i.e. the application server, the financial institution and the transaction are authorised only when both locations agree (Ghani, 2001). Double key secure authentication ensures secure network architecture, which is achieved when all the interaction points and data paths travelled are created using double secure keys (Ghani, 2001). The second method of security is a common security system called Public Key Infrastructure (PKI) used for PDAs and smart phones. PKI consists of two keys, i.e. the public key and the private key and both are used to authenticate the user and encrypt the data (Raina & Harsh, 2002:69). Oasis Technologies explains how the PKI-based transaction works (Anon., 2000e):

- The sender encrypts the message containing confidential information with a private key possessed only by him/her. This key is never transmitted over the Internet or subjected to compromise during transmission.
- The user's encrypted information is sent to the receiving party. The private key used to encrypt the data is never sent with the message and this is to ensure that the key used to encrypt the data remains integral.
- The receiving party uses a public key, which enables the recipient to unlock the data contained in the message. The public key ensures that the message has not been tampered with in any way.
- The receiving party cannot alter the message without indicating that it has been tampered with or mimicking the encrypting capabilities of the sender's private key. The public key needs to be transmitted to the recipient for the sender's message to be read, but this is never sent along with the encrypted data.

In view of the discussion of m-banking security, Laberis (quoted by Keen & Mackintosh (2001:197) states that "M-commerce is the future. It's going to happen regardless of the security problems and regardless of IT's response." Elliot and Phillips (2004:448) support this statement and add that wireless security is not something that should be treated in isolation of an organisation's overall security operations as damage might occur through accidental and unintentional acts of commission or omission from intrusion. Thus, any security policy needs to quantify and seek to address all these risks.

5.8 CONCLUSION

The advent of wireless and mobile technology has created both new opportunities and challenges for the business community. This statement is reiterated by Henderson and Harrison (s.a.) who argue that focused, relevant, location-specific and timely concepts are all key to the success of m-commerce. Furthermore, Jukic *et al.* (2001) add that m-commerce can be viewed as an extension of conventional Internet-based e-commerce, but the application includes a different mode of network and accommodates different end-user characteristics. Henderson and Harrison (s.a.) corroborate and postulate that m-commerce is not the new e-commerce but is an evolution of "e", and all the factors and effects should be considered before any wide-scale rollout is implemented.

In view of m-commerce roll-out, the ubiquitous mobile phone is an icon of technological history and is a mission-critical business tool as well as an essential fashion accessory (Anon., 2004e:55). The mobile device has enabled m-banking that is revolutionising financial and banking institutions and transforming the needs, services and expectations of societies in many countries (Raina & Harsh, 2002:266). The banking industry is an industry that has been impacted on by the growth of wireless technology, but this has enabled financial institutions and banks to deliver information and services conveniently, at any time and anywhere to a New Consumer who expects and requires immediate access to these services (Ghani, 2001). Moreover, banks are one of the fastest adopters of m-commerce with the implementation of m-banking as a value-added service to customers. In view of m-banking adoption, the relevance of the customer value proposition is increasing in the New Economy as that the customer is central to driving sustainable value from mobile financial services. As highlighted by Brumer and Kumar (2003:1), the success of m-commerce hinges on the consumer's willingness to adopt new technology and engage in activities using systems and devices different from what they have used in the past. Furthermore, this is supported by the MeT White Paper on mobile transactions (Anon., 2003l:12) that state that ease-of-use directly affects the consumer adoption of the security solution whereas costs associated with the solution form a critical component in the business case for the implementation of m-banking. Banks are increasingly addressing this issue by implementing technical issues as part of the value-added offering of m-banking and specifically retail banks are adopting B2C m-commerce tools, such as balance enquiries, and creating the ability for a consumer to process a transaction online. Moreover, it is highlighted that banks are increasingly adopting multi-channel strategies when communicating and serving the customer.

As it has now been established that m-commerce, as an m-business tool, and m-banking, as an m-business application, both function effectively as a value-added m-business offering, an empirical investigation on m-banking can be conducted. A review will be provided of the empirical research utilised, wherein the research problem and its associated research questions, research aims and theoretical statements are discussed. Furthermore, the methodological orientation, population and sampling, research design and data collection techniques will be discussed. Finally, the data analysis techniques and the validity and reliability of the chosen empirical research will be presented.

CHAPTER 6: METHODOLOGY

6.1 INTRODUCTION

The first section is a discussion on the research problem, which will deal with how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. Furthermore, the research aims and theoretical statements will be formulated, taking into consideration the four industry requirements for mobile banking stipulated in the Mobey Forum White Paper (Anon., 2004p), namely customer proposition, business priorities, technical issues and implementation issues. This will be followed by a discussion on the research methodology utilised while conducting the research. The quantitative and qualitative research methodologies will be discussed and the suitability of the qualitative methodology will be justified. The subsequent section will provide a description of the population and elaborate on the different sampling methods available for use in research of this nature. The research was conducted using a non-probability purposive sampling method which, as explained by Robson (2002:265), enabled the researcher to satisfy a specific need within the project, i.e. selecting respondents that had knowledge about Absa Mobile Banking. Due to the fact that Absa formed part of the population identified in the research, an explanation of the brand and its mobile banking component will be provided, and this section will include an explanation of the reasons why Absa has been chosen. Thereafter, the mobile commerce value chain developed by Müller-Veerse (2002:15) will be explained, as this value chain has assisted in clarifying the relevant parties and individuals that play a role in the implementation of Absa Mobile Banking as a value-added m-business offering.

This is followed by a discussion dealing with the research methodology and an explanation of the one-shot case study used in the research. As referred to by Babbie and Mouton (2004:72), the research design is the planning of scientific inquiry whereby a strategy is designed for finding out more about a specific topic. A discussion of the research methodology entails a description of the two-phased approach used in the research. Furthermore, reference will be made to the in-depth face-to-face interviews and the documentation study. An explanation will also be given of the first three stages that exist in the first phase of the research methodology. These refer to the in-depth face-to-face interviews conducted with Absa's Delivery Channel Services Department, mobile network operators and mobile phone manufacturers. The section dealing with research methodology calls for an explanation of the data collection methods used during both phases, hence, this will be followed by a discussion of the data collection methods and how these were

utilised to bring about methodological triangulation in the research. Furthermore, an explanation will be given of the Huberman and Miles data analysis technique and how this method has been utilised to analyse the data collected during the research. In conclusion, both the aspects of reliability and validity of the research are addressed, and justification is provided as to why the research conducted is both reliable and valid.

6.2 RESEARCH PROBLEM

The New Economy has brought about many changes in the way in which businesses and individuals function (Welfens, 2002:8). This economic order places emphasis on limitless digital resources and knowledge or intellect workers, hence, the focus on the creation of wealth from the application of knowledge to productivity and innovation rather than the allocation of labour and capital. Intangible assets such as information and knowledge have become very important in this economic order and knowledge contributes much more to value creation than the tangible assets (Mruz, 2000:1). Furthermore, the Internet forms a central part of the construction of this order as it enables a low-cost ubiquitous global network that supports rich multimedia exchanges of digital information (Kourdi, 2001:xi). The emphasis on the Internet in this economy has allowed for the increased salience of information and how it can be applied as a commercial and competitive tool by the New Consumer in the New Economy. This New Consumer is independent minded, individualistic and a well-informed individual who suffers from scarcities such as time, attention and trust (Lewis & Bridger, 2001:5). These scarcities have developed due to the impact of ICTs on society within this economic order, but more importantly these ICTs have created an environment that has brought about no geographical or time boundaries, and allows for customised and personalised information that is delivered to the consumer at his/her ease and convenience, irrelevant of the time or location of that individual.

Due to the ubiquitous environment that is created by ICTs in the New Economy, it has become imperative for businesses, competing for the revenue and attention of the New Consumer, to offer the opportunity to do business and conduct complex transactions and make purchases from anywhere and at any time (Heath & Wingfield, 2002). In the light of the statement made by Heath and Wingfield (2002), it is apparent that the delivery of value-added services has become very important in this new economic order. Moreover, m-business, and specifically m-banking, offers the opportunity to deliver value in the banking sector in the New Economy (Anon., 2004h). Therefore, it is important to note that value can be delivered only if businesses take the current market situation into consideration and offer a value proposition based on the existing

scenario. This means that businesses should offer value without expecting the consumer to make any major changes in order to benefit from the value offered, such as acquiring new technology or purchasing a new mobile phone. As emphasised by an article written by BitFlash (Anon., 2001i:4), wireless technology should be integrated that meets basic standards and best fits the need of the customer. Furthermore, this is highlighted by Jonathan Craig, the marketing vice-president of Charles Schwab, who says, “People are not going to go out and buy a new mobile phone, just to use your service.” (Anon., 2000f.) In this regard, BitFlash (Anon., 2001i:4) and the statement made by Craig (Anon., 2000f), emphasise that industry standardisation is a very important aspect that should be taken into consideration in the mobile banking industry. This statement is also relevant within a South African context as South Africa has an m-commerce and specifically m-banking industry that is still in an infant stage (Bührmann, 2002:58).

It is important to take cognisance of the fact that for mobile financial solution adoption to increase, banks need to emphasise the value that is added through the use of such a mobile financial solution. For example, m-banking, as an m-business application, is one tool that allows for the offering of a customer value proposition due to the ubiquity, convenience, localisation and personalisation that is offered. M-banking enables simple financial transactions to be conducted by the consumer irrelevant of time or location. Furthermore, due to the changes that have taken place within the consumer and his/her lifestyle, businesses in the New Economy need to make it a business priority to implement changes that ensure that the consumer’s need is addressed. Furthermore, m-businesses should take into account that trust is one of the major concerns of the New Consumer (Lindgren, 2002:100). In view of this, Henderson and Harrison (s.a.) state that this economic order is creating a scenario where the consumer relationship exists only with the infomediary and thus the elements of trust together with secure technology become very important. With reference to the statement of Hendersen and Harrison (s.a.), the business offering the m-business solution has to take technical issues such as technology limitations and device limitations into consideration. Finally, issues that pertain to the implementation of the m-business solution also have to be addressed. These include the time that the solution is taken to the market and/or the cost incurred by the consumer to use the solution and by the organisation to offer the mobile solution.

Mobile banking, as a value-added m-business offering, and the implementation of industry requirements in mobile banking, are topics that have not been fully investigated from an academic research approach. Mobile banking is a newly developing phenomenon in most businesses; hence, most of the documentation published on this topic is from a business

perspective and takes on the form of white papers or commercial magazine articles. However, this subject has been more extensively investigated by a number of researchers on the international front, but only from the consumer behaviour pattern perspective. Authors such as Mattila (2003) have investigated the factors affecting the adoption of mobile banking. Sivanand and Geeta (2004) have investigated the barriers to mobile Internet banking services adoption. Brown *et al.* (2003) have researched the predictors of the adoption of mobile banking in South Africa and many other online surveys such as the one by HSBC (Hong Kong and Shangai Banking Corporation) have assessed service levels with the aim of improving future services delivered within the domain of mobile banking. In comparison to these research studies mentioned, fewer studies have focused on the implementation of mobile banking as a value-added mobile business offering. This, despite Ayadi's (s.a.) comment that m-banking is a type of m-business that is considered to be one of the most value-added and important mobile services. Furthermore, as explained by Clarke (2001:139), value-for-time propositions have become very important within m-business and can be maximised for those businesses that can best implement the distinguished capabilities of m-commerce. The research was thus exploratory in nature as this approach was useful in the investigation of mobile banking as a value-added m-business offering. This can be guided by the Mobey Forum White Paper (Anon., 2004p) that has introduced industry requirements for mobile financial services. As these industry requirements for mobile banking are explained by the Mobey Forum White Paper (Anon., 2004p), the four industry requirements formed the four main focus areas within the research, and include customer proposition, business priorities, technical issues and implementation issues.

In the light of this, the research problem is: How does Absa's Delivery Channel Services Department implement the industry requirements of mobile banking as a value-added mobile business offering?

6.3 RESEARCH QUESTIONS

The specific research questions to be addressed are as follows:

1. How does Absa's Delivery Channel Services Department implement customer proposition as a value-added m-business offering?
2. How does Absa's Delivery Channel Services Department implement business priorities as a value-added m-business offering?

3. How does Absa's Delivery Channel Services Department implement technical issues as a value-added m-business offering?
4. How does Absa's Delivery Channel Services Department implement implementation issues as a value-added m-business offering?

6.4 RESEARCH AIMS

The specific research aims to be addressed are as follows:

1. To determine how Absa's Delivery Channel Services Department implements customer proposition as a value-added m-business offering.
2. To determine how Absa's Delivery Channel Services Department implements business priorities as a value-added m-business offering.
3. To determine how Absa's Delivery Channel Services Department implements technical issues as a value-added m-business offering.
4. To determine how Absa's Delivery Channel Services Department implements implementation issues as a value-added m-business offering.

6.5 THEORETICAL STATEMENTS

The following are theoretical statements and provide theoretical grounding for the research questions and aims:

1. The relevance of customer proposition is emphasised by Anon. (2001l) who states that to drive sustainable value from mobile financial services, there are three important factors to consider: customer, customer and customer.
2. As explained by Glick (2006) consumers and business priorities are coming together in mobile technology, which has led to access to information and communication at any time and anywhere, becoming a selling point and a necessity for companies.
3. Shi (2004:18) highlights the relevance of technical issues in the following statement: "In order for mobile business to continue to grow, technical issues such as device limitations, usability, standardisation and integration of different wireless technologies must be addressed."
4. As stated in the MeT White Paper on mobile transactions (Anon., 2003l:12), ease-of-use directly affects the consumer adoption of the security solution whereas the costs associated

with the solution form a critical component in the business case for the implementation of mobile banking.

6.6 METHODOLOGICAL ORIENTATION

As stated by Babbie and Mouton (2004:72) science, is an enterprise dedicated to "finding out" or as explained by Heppner *et al*. (quoted by Fouché & Delport, 2004:77) used to advance knowledge, to make discoveries and to acquire facts. Furthermore, Fouché and Delport (2004:77) highlight that "irrespective of what you want to find out, or what you want to discover, or what facts you want to acquire, there is a process involved – a process of scientific inquiry, a way of learning and knowing things about the world around us". In the light of this, Neuman (2003:139) adds that all social researchers systematically collect and analyse empirical data and carefully examine the pattern within them to understand and explain social life. Scientists use a variety of methods and techniques in empirical research, and the assumptions and values regarding the use of these methods and techniques fulfil a major role. The term methodological paradigm is used to explain these methods and techniques used by the social researcher as well as the underlying principles and assumptions regarding their use (Babbie & Mouton, 2004:49). As described by Schurink (1998:239), there are two methodological paradigms to research, namely the quantitative and qualitative approaches. These two different paradigms determine the direction of the research project. De Vos (2004:24) defines these research paradigms as a set of beliefs that constitute three very important aspects with regard to the researcher in the process of research. These aspects are as follows (de Vos, 2004:24):

- Ontology - meaning the researcher's perceptions regarding the nature of reality or the world and what there is to know about it.
- Epistemology - meaning the researcher's perceptions of where s/he stands in relation to reality or the world.
- Methodology - meaning the researcher's perception on how s/he can find out about reality or the world.

Moreover, Fouché and Delport (2004:79) concur with Schurink (1998:242) when these authors state that quantitative and qualitative research approaches differ in many ways and distinct differences can be noted between the two paradigms. In the light of this argument, Neuman (2003:139) remarks that these different paradigms complement each other as well. With regard to defining the terms, Schurink (1998:241) describes quantitative research as a paradigm that is

based on positivism with its main aims being to measure the social world objectively, to test the hypothesis, and to predict and control human behaviour. This is supported by Bryman (1988:18) who states that quantitative researchers rely on a positivist approach to social science and take on a technocratic perspective, which means that "reconstructed logic" is applied and a linear research path is followed. Furthermore, the technocratic perspective entails that the researcher is the expert, and research questions originate with the sponsors of the research. Therefore, quantitative research is the perspective of a technician who serves bureaucratic needs, as the main aim of this research is to discover and document generalisations orientated towards increasing efficiency as well. Therefore, quantitative research places emphasis on precisely measuring variables and testing hypotheses that are linked to general casual explanations. Neuman (2003:137) states that quantitative researchers, in comparison to researchers using the qualitative approach, are concerned with issues of design, measurement and sampling due to the deductive approach that is adopted in this research paradigm. The quantitative approach also places emphasis on detailed planning prior to data collection and analysis due to the deductive approach that is followed. This is described as hard data as it is in the form of numbers. Neuman (2003:152) adds that quantitative research is an organised method for combining deductive logic with a precise empirical observation in order to discover and confirm a set of probalistic or casual laws that can be used to predict general patterns of human activity.

In comparison, Northey *et al*. (2002:79) state that qualitative data analysis is referred to as the interpretive approach to social science research and it is aimed at describing, making sense, interpreting and reconstructing the interaction in terms of the meanings that the subjects attach to it. In addition, Lofland (quoted by Schurink, 1998:240) describes qualitative research as field research or fieldwork, naturalism, ethnography, interpretive research and constructivist research. Mouton (quoted by Schurink, 1998:240) explains that the term interpretive is used in qualitative research and refers to the fact that the aim of qualitative research is not to explain human behaviour in terms of universally valid laws or generalisations, but rather to understand and interpret the meanings and intentions that underlie everyday human action. Furthermore, Northey *et al.* (2002:79) reiterate that the researcher using the qualitative approach does not use numbers to measure the variables in the theories but rather refer to variables. Moreover, qualitative researchers are concerned with how an entire pattern of thinking and acting fits together, with the uniqueness and changeability of the situation and they place emphasis on the interplay between their own consciousness as observers and the consciousness of the people that they are studying (Northey *et al*., 2002:79).

Furthermore, as postulated by Fouché and Delport (2004:18), there are a number of distinct differences between quantitative and qualitative research paradigms. The differences between these two methodological paradigms can be explained as follows:

- Quantitative research has its epistemological roots in positivism. Neuman (2003:16) concurs and adds that in comparison, qualitative research has its epistemological roots in phenomenology.
- Schurink (1998:242) explains that quantitative data uses a deductive form of reasoning, which entails a process in which data is collected to assess preconceived models, hypotheses and theories. In comparison, qualitative research uses an inductive form of reasoning whereby concepts, insights and understanding are created from patterns in the data.
- Quantitative research uses an etic perspective, which means that the meaning is determined by the researcher. In contrast to the aforementioned, qualitative research uses an emic perspective of inquiry, which means that meanings are derived from the subject's perspective. Quantitative research entails a process in which the researcher is detached, whereas qualitative research requires the researcher to become involved.
- Quantitative research is nomothetic, which means that the aims are to measure the social world objectively, to test the hypothesis, and to predict and control human behaviour. This is described as measuring objective facts. In comparison, qualitative research is described as idiographic, which means that the aims are to understand the meaning that people attach to everyday life. Qualitative research focuses on constructing social reality and cultural meaning, so as to capture and discover meaning once the researcher becomes immersed in the data.
- Quantitative research sees reality as objective, while qualitative research is an approach that regards reality as subjective.
- Quantitative research tests hypotheses that are relevant to the study. In comparison, qualitative research captures and discovers meaning once the researcher becomes immersed in the data.
- Schurink (1998:242) concurs with Fouché and Delport (2004:81) and states that quantitative research uses concepts in the form of distinct variables and qualitative research uses concepts in the form of themes, motifs and categories. In comparison, qualitative research focuses on interactive processes and events due to the fact that concepts are in the form of themes, motifs, generalisations and taxonomies.
- According to Schurink (1998:242), quantitative research seeks to control the phenomena, whereas qualitative research seeks to understand the phenomena.

- Schurink (1998:242) postulates that quantitative research is systematically undertaken in a standardised manner as the research design can be replicated. Moreover, Schurink (1998:242) adds that qualitative research involves observations that are determined by the information richness of settings and the types of observations used are modified to enrich the understanding. The research design is flexible and unique, and evolves throughout the research process.
- Neuman (2003:16) and Schurink (1998:242) explain that quantitative research data is presented by means of exact figures gained from precise measurement, whereas qualitative research data is presented in the form of words and quotes from documents and transcripts. Furthermore, qualitative research entails participants' natural language used to understand the world and can contain thematic analyses.
- The research design used in quantitative research is a research design that is standardised according to a fixed procedure and can be replicated. In comparison, qualitative research is flexible and unique, and it evolves throughout the research process. This research design has no fixed steps that should be used and cannot exactly be replicated.
- Quantitative research data analysis is undertaken by means of standardised statistical procedures, whereas qualitative research data is analysed by extracting themes.
- Schurink (1998:242) and Neuman (2003:123) concur with Fouché and Delport (2004:81) and state that quantitative research design uses a unit of analysis that is atomistic, meaning that the elements form part of the whole. Within the qualitative research design, the unit of analysis is holistic, concentrating on the relationships between the elements, contexts and many other elements. In this research approach, the whole is always more than the sum.

With reference to these differences that exist between quantitative and qualitative research methodologies, it can be said that a qualitative research methodology was chosen. The use of a qualitative research approach allowed for the use of inductive logic, which means that insight was gained from patterns in the data in Absa Mobile Banking. This is one of the advantages of qualitative research methodology as it allows for the respondents from Absa to explain the intricacies of Absa Mobile Banking, which has led to a genuine understanding of mobile banking in Absa. Furthermore, the use of a qualitative research approach allowed for the understanding of the Absa Mobile Banking due to the fact that mobile solution was explained in the respondent's own words, which also allowed for the extraction of themes in the research.

As established, mobile banking as a B2C m-commerce application in the retail banking sector of South Africa has not been fully investigated from an academic research approach. Furthermore,

no research has been conducted specifically dealing with how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. As postulated by Bless and Higson-Smith (quoted by Fouché, 2004:109), exploratory research uses a qualitative research approach and assists in gaining insight into a situation, phenomenon, community or individual. Thus, the explorative approach allowed for a better understanding and interpretation of Absa Mobile Banking and how the bank implements customer proposition, business priorities, technical issues and implementation issues as a value-added m-business offering. In this light of this, the research problem was to investigate how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering, which needed an explorative approach to the research to ensure that a thorough and in-depth understanding was generated. This understanding was generated through the use of the qualitative research method that uses an interpretive approach, which focuses on understanding and interpreting meanings and intentions that underlie everyday human action.

It is imperative for a thorough understanding to exist around the research, population and sampling techniques, which are discussed in the following section.

6.7 POPULATION AND SAMPLING

Zikmund (2003:462) defines a population as any complete group of entities that share some common set of characteristics. It is important to note that a distinction must be drawn between the terms universe and population. As defined by Arkava and Lane (quoted by Strydom & Venter, 2004:198), a universe refers to all potential subjects who possess the attributes in which the researcher is interested. In comparison to a universe, a population refers to a term that sets boundaries on the study units and refers to the individuals in the universe that have specific characteristics. Power *et al.* (quoted by Strydom & Venter, 2004:198) also provide a definition of a population and define it as a set of entities in which all the measurements of interest to the practitioner or researcher are represented. Seaberg (quoted by Strydom & Venter, 2004:198) supports this definition and adds that it is the total set from which the individuals or units of the study are chosen. McBurney (2001:248) also offers a definition of a population, which is very similar to all the previous ones as it refers to it as a sample frame, as this is the totality of persons, events, organisation units, case records and other sampling units with which the research problem is concerned.

In view of the research problem and the fact that the implementation of Absa Mobile Banking as a value-added m-business offering needs to be investigated, the population identified for the research is the Delivery Channel Services Department of Absa. The Delivery Channel Services Department of Absa has ten individuals involved in the delivery of m-banking or otherwise referred to as Absa Mobile Banking. Therefore, the organisational structure and core business components of the bank must be well understood to generate an understanding of, and insight into, the business processes in the bank. Moreover, the reasons for selecting Absa for the research must be clear.

The South African banking industry is currently dominated by five major banking groups, namely Standard Bank, Nedcor, Absa, FirstRand and Investec (Claassen & Brooks quoted by Louw, 2004:13). These five groups collectively dominate the South African banking sector, as combined they control 89,4% of the total banking assets in the country.

Absa offers an array of services to personal, commercial and corporate customers in South Africa and has extended selected products and services to selected markets in the United Kingdom, Channel Islands, Germany, the United States, China (specifically Hong Kong and Shanghai), Singapore, Mozambique, Namibia, Tanzania and Zimbabwe (Anon., 2005c). This has had a major impact on the reach of the bank to customers. Absa was formed in 1991 when the Amalgamated Banks of South Africa Limited (ABSA) developed from a merger of UBS Holdings, the Allied and Volkskas Groups and certain interests of the Sage Group (Anon., 2005c). In 1992 the asset base of these bodies was extended when Absa acquired the entire shareholding of the Bankorp Group, which included Trustbank, Senbank and Bankfin. In 1997 the name changed from Amalgamated Banks of South Africa Limited to Absa Group Limited. The Absa brand, as it is known today, took on a new corporate identity in 1998 when the United, Volkskas, Allied and TrustBank brands were consolidated into a single brand (Anon., 2005c). In addition, Absa has undergone major development and the key statistics for the year ending 31 March 2005 reflect a staff complement of 32 515, assets of R348,7 billion, 675 full and subsidiary outlets, and 5078 ATMs (Anon., 2005d).

Moreover, Absa has initiated the Delivery Frontiers Programme, which has brought a team of innovative thinkers together to identify the disruptive technologies that will have a major impact on markets in the near future. This bank has already implemented Internet banking and mobile banking as delivery channels within the business model. Absa's Internet banking component was born in 1996 and it was the first bank to introduce Internet banking to South Africa (Anon.,

2004e). Internet banking forms a very important component of the bank's customer value proposition and the service initially only offered balance and statement functionality, but Absa has developed into a fully-fledged service currently offering a highly functional and multidimensional financial services portal on the Internet (Van Rensburg, 2005).

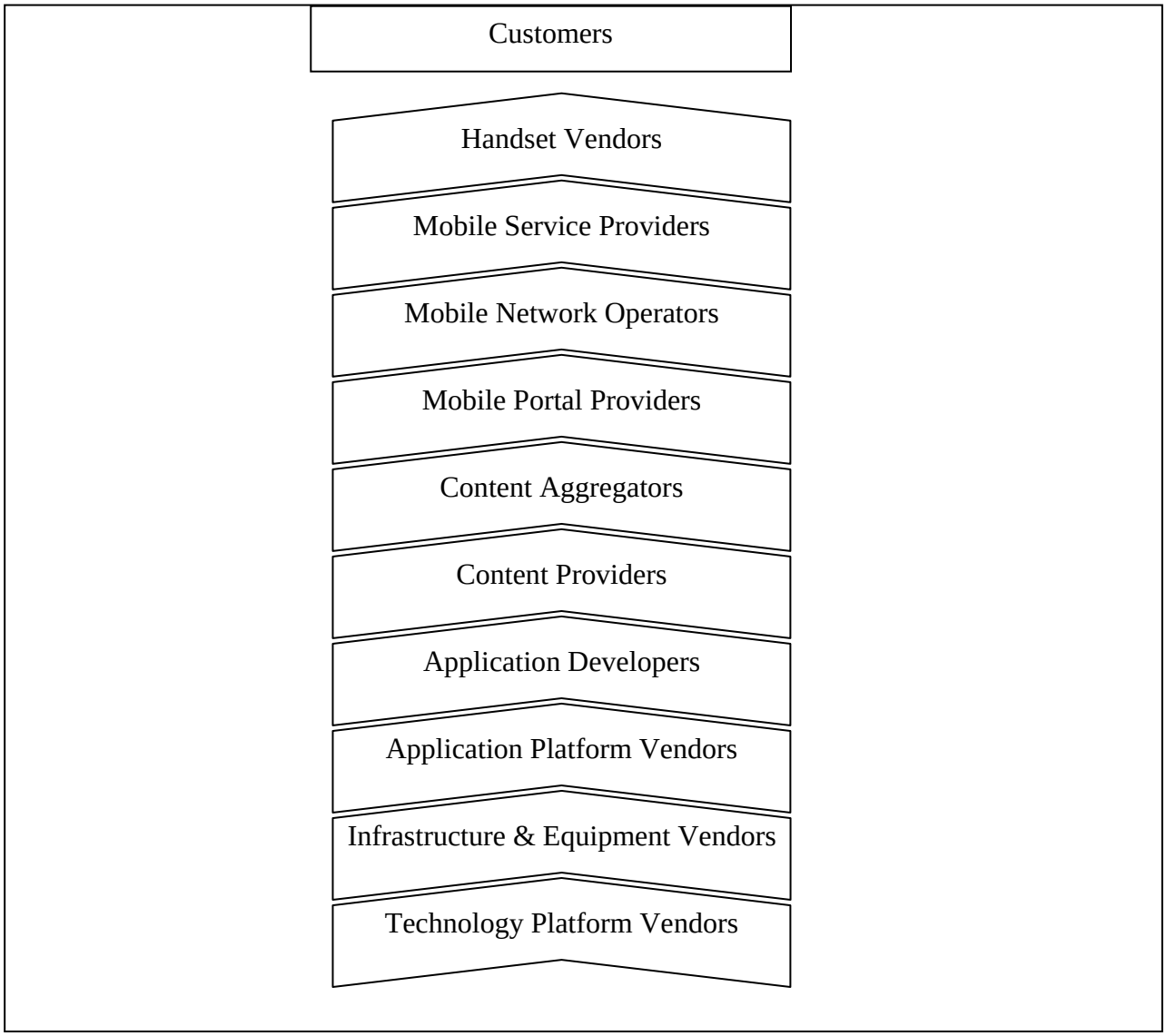
In addition, Absa offers mobile banking known as Cellphone Banking as a streamlined, affordable and intuitive service rendered via mobile phones with transactions taking no more than two to three SMSs to complete. Absa Mobile Banking is a self-service banking solution that can be used to perform limited banking transactions at any time using a mobile phone. This service can currently be used to view balances, top up airtime, transfer funds, pay accounts, obtain mini-statements and purchase pre-paid Telkom vouchers (Anon., 2005c). This service was offered to 48 112 registered consumers by the end of January 2005 (Anon., 2005d). All Absa personal customers can register for mobile banking free of charge and transactions can be performed using a single PIN number. Although a total transaction value of R83 million was processed with Absa Mobile Banking by January 2005 and this mobile commerce application has already gained a 56% market share, it is still developing very slowly when compared to other delivery channels such as the Internet (Anon., 2005d). As stated by Vrey (Anon., 2005d), the number of non-financial transactions per consumer comes to fourteen while the average number of financial transactions per consumer is estimated at one transaction per consumer. Furthermore, security forms a key component of the mobile banking unit of Absa and the transmission of data is protected by using industry-recognised encryption standards (Anon., 2005c).

In the light of what has been discussed with regard to Absa, the reasons for choosing Absa are as follows:

- Absa has the biggest retail network in South Africa with a total of 475 000 Internet banking customers and seven million customers in March 2005 (Anon., 2004m).
- Absa has the largest Internet banking service in South Africa that services over 10% of its total retail customer base as it grew by 18,9% from April 2004 to March 2005 (Anon., 2005d).
- With reference to the research problem, it is necessary that Absa Mobile Banking has been implemented in Absa due to the fact that the research deals with the implementation of the industry requirements of mobile banking.

The implementation of Absa Mobile Banking has already taken place in the South African market, but the delivery of this mobile financial solution depends on a number of partnerships that exist between Absa and other entities. Müller-Veerse (2002:15) is one author that has designed an m-commerce value chain that depicts the various role players involved in the delivery of m-commerce. In the light of this, it should be noted that m-banking can be categorised as a type of m-business and specifically falls within the category of m-commerce (Anon., 2000c). As illustrated in figure 6.7.1, all the parties in this m-commerce value chain contribute to the delivery of an m-commerce service and, within the context of Absa Mobile Banking, these parties include Absa, mobile network operators and mobile phone manufacturers.

Figure 6.7: The mobile commerce value chain (Müller-Veerse, 2002:15)



However, it should be noted that the focus is not on the consumer, which features at the top of the value chain. This is due to the fact that numerous studies have been conducted by Matilla

(2003), Sivanand and Geeta (2004) as well as Brown *et al*. (2003) that focus on mobile banking and how this mobile solution is adopted by the consumer. The focal point of the research is Absa's implementation of mobile banking as the research problem aims to investigate how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. Furthermore, the research places emphasis on the implementation of the four different industry requirements of mobile banking such as customer proposition, business priorities, technical issues and implementation issues, and how these are implemented by Absa's Delivery Channel Services Department as a value-added m-business offering. In view of the issues investigated, the various relevant role players that contribute to the delivery of m-banking, as an m-business offering, are contained in the m-commerce value chain (Müller-Veerse, 2002:15). Therefore, the need arises for the m-commerce value chain usage.

With reference to Absa Mobile Banking, the value chain holistically refers to three groups that were used for the research, and together these groups constitute every component of the value chain, excluding the customer. The value chain involves the following partners:

- Handset vendors – refer to the various mobile phone manufacturers and the population of this group equals ten mobile phone manufacturers in South Africa. The identification of the mobile phone manufacturers in South Africa was based on the analysis of this market conducted by Goldstuck (2005:65). According to Goldstuck (2005:65), these include Nokia, Sony Ericsson, Motorola, Siemens, LG, Samsung, i-Mate (Leaf Wireless), Palm One, SAGEM and Blackberry.
- Mobile service providers – refer to the mobile network operators of which there are three in South Africa, namely Vodacom, MTN and Cell C. This is due to the fact that the mobile network operators also function as mobile service providers in South Africa.
- Mobile Network Operators – refer specifically to the network operators.
- Mobile portal providers – refer to the various mobile network operators.
- Content Aggregators – in Absa Mobile Banking, the content aggregator is identified as Absa as this is the entity that repackages the data regarding Absa Mobile Banking for distribution to the mobile device.
- Content providers – Absa holds all personal and account details pertaining to the individual conducting Absa Mobile Banking and thus provides the content.
- Application developers – Absa is identified as the application developer as the bank has developed the software used to deliver Absa Mobile Banking.

- Application Platform Vendors – this category refers to Absa and the three South African mobile network operators as these entities both have middleware infrastructure such as WIG servers.
- Infrastructure and equipment vendors – this function is specifically fulfilled by the mobile phone manufacturers as they provide the basic mobile phone infrastructure such as WIG.
- Technology Platform Vendor – i.e. the various mobile phone manufacturers as these partners provide the basic operating systems for the mobile device such as PalmOS.

Taking into consideration the m-commerce value chain of Müller-Veerse (2002:15), it can be noted that the total population pertaining to the research consists of 22 respondents.

The preceding section dealt with the population pertaining to the research, and hence the focal point will now shift to an explanation of the sampling. Arkave and Lane (quoted by Strydom & Venter, 2004:199) define a sample as elements of the population considered for actual inclusion in the study and it can also be viewed as a subset of measurements drawn from a population in which the researcher is interested. Powers *et al*. (quoted by Strydom & Venter, 2004:199) add that a sample helps to explain some facet of the population as it is a small proportion of the total set of objects, events or people that together comprise the subject of the study. This statement is supported by Babbie and Mouton (2004:164) who state that sampling is the process of selecting observations. In addition, Neuman (2003:210) notes that quantitative and qualitative researchers approach sampling differently as quantitative researchers focus on getting a representative sample and therefore use techniques that will yield representative samples. Furthermore, quantitative sampling is based on theories of probability from mathematics. In contrast, qualitative researchers focus less on sample representativeness or on detailed techniques to draw a probability sample. These researchers focus more on how the sample, units or activities illuminate social life. The primary purpose of the sample within the qualitative research paradigm is to clarify and deepen understanding, and cases are found that enhance the learning about the process of social life in a specific context.

Based on the above discussion, it should be noted that quantitative and qualitative researchers can utilise two different types of sampling, namely probability and non-probability sampling.

6.7.1 Probability sampling methods

Probability sampling is primarily used by researchers using a quantitative method of data analysis as this is based on theories of probability from mathematics (Neuman, 2003:211).

Babbie and Mouton (2004:645) further state that a probability sample is the general term used for a sample selected in accordance with probability theory, and this technique usually makes use of random selection mechanisms. Each element thus has an equal probability of being selected. There is a total of four different probability (random) sampling techniques, namely simple random sampling, systematic sampling, stratified sampling and cluster sampling (Robson, 2002:261; Neuman, 2003:211). These four different types are described as follows:

a) Simple random sampling

   The simple random sampling technique allows for each individual case in the population to have an equal chance to be selected for the population (Strydom & Venter, 2004:204). Neuman (2003:218), Strydom and Venter (2004:204) as well as Babbie and Mouton (2004:190) agree that this sampling technique is the easiest random sample to understand and the one on which other types are based. This technique requires the researcher to develop an accurate sampling frame, select elements from the sampling frame according to mathematically random procedures and then locate the exact element that is selected for inclusion in the sample. This procedure is followed until the required number of units is selected for the sample.

b) Systematic sampling

   According to de Vos (2004:190), the systematic sampling technique is seldom used in practice as it is not the most efficient method and can be a difficult task if done manually. As described by Neuman (2003:221), Robson (2002:261) and Knight (2002:121), the systematic sampling method is simple random sampling with a short cut for random selection and entails a technique where the selection of a first case takes place randomly, preferably from a random table, and all the subsequent cases are selected according to a particular interval, e.g. every third or fifth case on a list. As highlighted by Neuman (2003:190), systematic sampling is virtually identical to simple random sampling. If the elements are indeed randomised before sampling, it can be said that the systematic sample drawn from the list is in fact a simple random sample. Strydom and Venter (2004:204) do however point out that a major disadvantage lies in the possibility that the sample process may be biased, and this is due to periodicity (Neuman, 2003:206).

c) Stratified random sampling

   As explained by Robson (2002:261), the stratified random sampling technique is a type of sampling that is suitable for heterogeneous populations because the inclusion of small sub-groups can be ensured percentage wise (Van der Walt quoted by Strydom & Venter, 2004:205). As highlighted by Neuman (2003:191) stratified sampling is a method for

obtaining a greater degree of representativeness. Neuman (2003:191) further mentions that the use of this sampling method can create the possibility of decreasing the probable sampling error. This sampling method requires the researcher first to divide the population into sub-populations, otherwise referred to as strata, which is done on the basis of supplementary information (Robson, 2002:261). A random sample is then drawn from each sub-population using simple random or systematic sampling. Strydom and Venter (2004:205) postulate that this kind of sample is mainly used to ensure that the different groups or segments of a population acquire representation in the sample. Hoinville (quoted by Strydom & Venter, 2004:205) also refers to this as proportionate stratification.

d) Cluster sampling

Cluster sampling is one of the methods that can be used when the list of units contained in the population is unknown. This method is also used when economic considerations and cluster criteria are significant for the study (Strydom & Venter, 2004:206). A cluster is a unit that contains final sampling elements but can be treated as a sampling element itself. As explained by Robson (2002:261) as well as Strydom and Venter (2004:206), the process involves the researcher creating a number of externally homogenous but internally heterogeneous clusters within the relevant population. The random selection of one of these clusters in the sample then takes place. The process also requires the researcher to draw several samples in stages in cluster sampling.

The previous section discussed the various probability sampling methods utilised in quantitative methodologies. The next section will deal with an overview of the various non-probability sampling methods generally used by qualitative researchers.

6.7.2 Non-probability sampling methods

According to Neuman (2003:211), the non-probability sampling is primarily used by qualitative researchers, and this method requires less focus on a sample's representativeness or on a detailed technique for drawing a probability sample. The focus in this research technique is on how the sample or small collection of cases, units or activities illuminates social life. The aim of the sampling process is to collect specific cases, events or actions that can clarify or deepen understanding (Neuman, 2003:211). In addition, non-probability sampling is defined by Babbie and Mouton (2004:644) as a sample selected in some fashion other than the ways suggested by the probability theory. Zikmund (2003:474) adds that non-probability sampling can be defined as "a sampling technique in which the units of the sample are selected on the basis of personal judgement or convenience; the probability of any particular member of the population being

chosen is unknown". There are various non-probability sampling techniques that include convenience sampling, purposive sampling, theoretical sampling and snowball sampling and these are described as follows:

a) Convenience sampling

   Convenience sampling, also known as accidental or haphazard sampling, can produce ineffective, highly unrepresentative samples, and it is not a recommended sampling method (Neuman, 2003:211). As emphasised by Robson (2002:265), it is one of the most widely used and least satisfactory methods of sampling. As explained by Strydom and Venter (2004:207) it entails that any case that happens to cross the path of the researcher or has anything to do with the phenomenon included in the sample until the desired number of units is obtained. If cases are conveniently selected, the possibility exists of obtaining a sample that seriously misrepresents the population.

b) Purposive sampling

   The purposive sampling technique that is based entirely on the judgement of the researcher as the judgement of the expert is used in selecting cases with a specific purpose in mind. As described by Robson (2002:265), a sample that enables the researcher to satisfy a specific need in a project is built up. This method is used in exploratory research or in field research, but it should be noted that the researcher never knows whether the cases selected represent the population (Neuman, 2003:213). The sample consists of the elements that contain the most characteristic, representative or typical attributes of the populations (Strydom & Venter, 2004:207). The disadvantage of this method is the fact that the judgement of the individual researcher is too prominent a factor in this type of sampling.

c) Theoretical sampling

   As explained by Knight (2002:212), this type of sampling entails a process in which the researched units are carefully selected, as the researcher develops grounded theory. The selection of sample cases is guided by the theoretical interest and the researcher selects cases based on new insights that develop from the research (Neuman, 2003:215). According to Strydom and Venter (2004:335), theoretical sampling helps to define categories, identify the contexts in which they are relevant, specify the conditions under which they come up or are maintained and discover their consequences. Furthermore, Strydom and Venter (2004:335) add that at a certain point during the data-gathering phase, the researcher will no longer find any new categories of data, or any inputs into existing categories of data and this is referred to as theoretical saturation (Babbie & Mouton, 2004:288).

d) Snowball sampling

Snowball sampling is also referred to as network, chain, referral or reputational sampling, and it is defined by Neuman (2003:214) as a method for identifying and sampling (or selecting) the cases in a network. This is supported by Robson (2002:265) and Knight (2002:122) who explain that individuals are used as informants to identify other members of the population. This sampling technique is based on the analogy of a snowball due to the fact that the sample begins small but becomes larger as it progresses. Snowball sampling is a multistage technique as it may start with one individual who offers the names and contact numbers of more respondents who might be relevant to the specific research topic.

In view of the various sampling techniques discussed, a non-probability sample was used. As established, the research is exploratory in nature and therefore, purposive sampling was selected as the sample method. Purposive sampling focuses less on a sample's representativeness but rather on a small selection of specific cases that can clarify or deepen understanding. This was done with the goal of gaining in-depth information pertaining to Absa Mobile Banking and generating a deeper understanding of the mobile financial solution. Moreover, a total of 19 respondents were selected, which means that 86,3% of the total population formed part of the sample. The sample and the sample selection were completed by using the m-commerce value chain of Müller-Veerse (2002:15) that depicts the population pertaining to the research. One of the advantages of the utilisation of the purposive sampling method is that it allowed for the judgement of an expert such as the researcher in the selection of respondents. These 19 respondents with the three groups mentioned above were categorised as follows:

- Ten respondents were chosen from Absa Delivery Channel Services Department Staff who were selected due to the fact that they are responsible for Absa Mobile Banking in Absa. This sample is 100% representative of the population of the Absa Delivery Channel Services Department pertaining to mobile banking.
- Two respondents were chosen from the mobile network operators, namely MTN and Cell C. This resulted in 66,6% representivity of the total population pertaining to mobile network operators.
- A total of seven respondents were selected from the various mobile phone manufacturers. Moreover, a sample of 70% of the total population of mobile phone manufacturers in South Africa was chosen.

In the light of the fact that the sample has been selected, it is now necessary to elaborate on the research methods utilised to gain information from these respondents pertaining to Absa Mobile Banking.

6.8 RESEARCH METHOD

The overriding research method is a one-shot exploratory case study, which is defined by Fouché (2004:274) as a qualitative approach that refers to an exploration or in-depth analysis of a "bounded system", bound by time and/or place, or a single or multiple cases, over a period of time. Furthermore, Fouché (2004:274) adds that the case refers to a process, activity, event, programme or individual or multiple individuals. As highlighted by Babbie (quoted by Fouché, 2004:275), the one-shot case study researcher seeks to enter the field with knowledge of the relevant literature before conducting the field research. As stated by Neuman (2003:33), the researcher may intensively investigate one or two cases or compare a limited set of cases, focusing on several factors. Neuman (2003:33) also adds that case studies help researchers to connect the micro-level, or the actions of individual people, to the macro-level, or large-scale social structures and processes.

According to Babbie and Mouton (2004:282), the exploration and description of the case takes place through the use of in-depth data collection methods that involve the use of a qualitative research approach. These may include interviews, documents, observations or archival records. Moreover, Mark (quoted by Fouché, 2004:275) refers to three different case studies and explains that all have different purposes. The three types are as follows (Fouché, 2004:275):

- The intrinsic one-shot case study is focused on the aim of obtaining a better understanding of the individual case. The purpose is to understand the specific case at hand and not the broader social issue.
- The instrumental case study is used to gain a better understanding of a social issue and to elaborate on a theory.
- The collective case study focuses primarily on furthering the researcher's understanding of a social issue or population being studied. The specific case study is secondary to the interests of the researcher and, in many instances, cases are chosen so that comparisons can be made between cases and concepts, and that theories can be extended and validated.

With reference to the research design, it can be deduced that a one-shot intrinsic exploratory case study was chosen because it offers the opportunity of gaining a deeper understanding of how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. It is also important to note that the one-shot exploratory case study will offer an intensive investigation into a single unit, namely Absa Mobile Banking (Babbie & Mouton, 2004:280). Furthermore, Babbie and Mouton (2004:280) explain that a case study takes multiple perspectives into account and attempts to understand the influences of multilevel social systems on subjects' perspectives and behaviours. The exploratory research will be used to gather information pertaining to Absa Mobile Banking, to establish facts and to determine whether there are any significant patterns with regard to the implementation of this mobile solution as a value-added m-business offering (Mouton, 1996:103).

Within the one-shot exploratory case study, the following phases were used to form a better understanding of the case study:

6.8.1 Phase one: in-depth face-to-face interviews

As stated by Greeff (2002:292), interviewing is the predominant mode of data or information collection in qualitative research. In support of this, Babbie and Mouton (2004:288) highlight the fact that the basic individual interview is one of the most frequently used methods of data gathering in the qualitative approach. Interviewing is a valuable data collection tool, but it is essential that highly skilled interviewers conduct the interviews. Furthermore, the qualitative interview is a discussion or conversation in which the interviewer establishes a general direction for the conversation and questions additional topics raised by the respondent during the interview (Babbie & Mouton, 2004:289). In support, Kvale (quoted by Greeff, 2002:292) supplies a similar definition to that of Babbie and Mouton (2004:289) and defines qualitative interviews as "attempts to understand the world from the participant's point of view, to unfold the meaning of peoples' experiences [and] to uncover their lived world prior to scientific explanations". Similarly, Schurink (1998:298) defines the in-depth interview with an individual as face-to-face interactions between an interviewer and an interviewee, where the purpose is to understand the interviewee's life experience or situation, which is expressed in his/her own words. Furthermore, Denzin and Lincoln (quoted by de Vos, 2004:90) add that the use of interviews for obtaining data is inherent in behavioural sciences. Babbie and Mouton (2004:249) state that the in-depth, face-to-face interview has the overt purpose of collecting information from one person by another during a structured conversation with premeditated questions.

As highlighted by Neuman (2003:290), there are advantages and disadvantages linked to the use of face-to-face interviews and the use thereof as a qualitative research method. Neuman (2003:290), Knight (2002:63) and Robson (2002:273) elaborate on the advantages and disadvantages of face-to-face interviews, and explain that this type of interview is advantageous as it has the highest response rates and permits the longest questionnaire. Furthermore, as explained by Neuman (2003:290), this type of interview allows for the observation of surroundings and can use non-verbal communication as well as visual aids. This is supported by Robson (2002:273) who explains that non-verbal cues give messages that will help understand the verbal response. In addition, face-to-face interviews conducted by well-trained interviewers can ask all types of questions, and can elaborate and investigate important issues and concepts emerging during the interview.

In addition to the advantages of face-to-face interviews discussed, Neuman (2003:290), Robson (2002:273) and Knight (2002:63) also discuss the disadvantages of face-to-face interviews. As mentioned by Neuman (2003:290), face-to-face interviews entail high costs as training, travel, supervision and personnel costs should be considered. In support of this, Robson (2002:273) explains that interviewing is time-consuming and may vary in length, but any interview shorter than half an hour is unlikely to be valuable. Neuman (2003:290) continues to explain that in many instances interviewer bias exists and this is supported by Knight (2002:54) who adds that the interviewer is part of both data development and collection. In the light of this, Neuman (2003:290) adds that the appearance, tone of voice, question wording or any other personal trait of the interviewer may affect the respondent and because interviewer supervision rarely exists in a face-to-face design, the interviewer may negatively influence the interview.

In view of the discussion on issues pertaining to interviews, Babbie and Mouton (2004:249), Knight (2002:63) and Robson (2002:270) explain that there are three types of interviews. These are known as fully structured, semi-structured and unstructured interviews. Firstly, structured interviews entail having predetermined questions with fixed wording, which is usually in a pre-set order. As stated by Robson (2002:271), the use of mainly open-response questions is a very important component of structured interviews. Secondly, semi-structured interviews are described as having predetermined questions, but the order can be modified based on the interviewer's perception of what seems most appropriate. This is supported by Knight (2002:63) who explains that the respondents are given a mix of open and closed questions, and the interviewer will use his/her judgement to improvise. In addition, Schurink (1998:302) explains

that semi-structured interviews are held to gain a detailed account of a participant's belief or perceptions about a particular topic. Finally, the last type of interview is unstructured interviews, which refer to a style of interview that lets the developer create a conversation that develops around a certain area of interest or concern. This type of interview can be completely informal and, as stated by Knight (2002:63), questionnaires seek free comments around those topics or questions that elaborate on the topic of interest. Berg (quoted by Schurink, 1998:298) highlights an important issue when it is stated that unstructured interviewing could be described as social interaction between equals in order to obtain research-relevant information.

Consequently, structured in-depth open-ended face-to-face interviews were used because such interviews allow for the use of predetermined questions with fixed wording (Knight, 2002:63). As established, the questions used in the interview schedule were developed by using the Mobey Forum White Paper (Anon., 2004p) as a template and guideline. The four main categories covered in these interview schedules are the four industry requirements of mobile banking, as stipulated in the Mobey Forum White Paper (Anon., 2004p). Moreover, this meant that interview schedules were all developed with the goal of investigating how Absa's Delivery Channel Services Department implements the industry requirements for mobile banking as a value-added m-business offering. The different sections of the interview schedule focused on ascertaining how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking, namely customer proposition, business priorities, technical issues and implementation issues, as a value-added m-business offering.

6.8.2 Phase two: documentation study

Strydom and Delport (2002:321) define documentation study as "the analysis of any written material that contains information about the phenomenon being researched". Where these documents are studied and analysed for the purposes of scientific research, the method of documentation study as a data collection method becomes operative. As highlighted by Robson (2002:350), there are many ways in which documents can be used during research over and above analysing their content, and these approaches focus on the authenticity of the document or the writer's intention. As highlighted by Potter (1996:95), documents are preserved recordings of people's thoughts, actions and creations.

Potter (1996:95) explains that documents are especially important to investigate patterns and trends from the past. Robson (2002:361) notes that organisational documents can be a very valuable supplementary source but may often not offer direct answers to issues pertaining to the

research. Furthermore, Robson (2002:361) also highlights a very important issue when it is mentioned that a thorough exploratory study of existing data may suggest questions or act as a starting point for unforeseen lines of enquiry. Document studies require the rearranging of data in various ways so that data can be compared to different scenarios and time periods. Robson (2002:361) explains that the research problem or question assists in selecting what documentation is important and relevant. According to Robson (2002:362), multi-method case studies are also different in the sense that available administrative records are examined to see what additional corroboration exists with the case being studied. If the documents do not help with the research questions, it is either not used or it is considered how modifications need to be made based on what has been found in the documentation study.

Strydom and Delport (2002:325) note that there are a number of advantages linked to the use of a documentation study and these are as follows:

- Documentation study is relatively affordable, but the various factors influencing the cost, such as the dispersion and availability of documents, the type of document and the distance that needs to be covered before the document is obtained, need to be considered.
- Many individuals may be more likely to confess in a document and thus the study of documents, i.e. diaries, autobiographies and suicide notes, may be the only way to obtain information about a person, particularly after death.
- In support of Strydom and Delport (2002:325), Robson (2002:349) explains that documentation study offers the advantage of the producers of the documents not anticipating the analysis of their documents at a later stage.
- It is the only method where the researcher does not need to make personal contact with the respondents. This method also allows the researcher to study civilisations of long ago or people who have already died.

Although documentation studies offer numerous advantages, it should be noted that there are a number of disadvantages linked to the use of this method, discussed by Strydom and Delport (2002:325) as follows:

- Documents used by the researcher are often incomplete, which means that there are gaps in the database. This is also highlighted by Robson (2002:362) who explains that the quality of the document needs to be assessed as information central to the activities of the organisation will be of a better quality than more peripheral items.

- Due to the fact that many documents are not written for research purposes, there are many factors that can influence the objectivity of these documents. In view of this, Robson (2002:363) adds that a variety of sampling from administrative records may be needed to ensure more representivity and exclude the bias factor.
- Written documents that could be valuable to the research may be destroyed by fires or floods, and the preservation of these documents is not guaranteed.
- Documents are not always accessible and available, as records might never have been kept or classified, or they might be inaccessible for security reasons.
- A lack of linguistic skill can negatively influence the research process as the researcher is dependent on the linguistic skill of the respondent to write clearly and meaningfully.
- It is often impossible to ascertain important facts such as the origin or date of a document, which may negatively influence the validity of that document for the particular research project.

Subsequently, this particular qualitative research approach was utilised because 14 articles and documents offered insight into Absa Mobile Banking as a value-added m-business offering of the bank. Although the primary focus was not on the documentation study as the primary method of data collection, this method offered clarity on certain concepts related to how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. The postulation of Robson (2002:362) also becomes relevant in the context of the research as documentation study is used to confirm and elaborate on the findings found in the various interviews conducted with Absa staff members, network operators and the various mobile phone manufacturers. Cognisance should be taken of the fact that the two phases of the research, namely structured in-depth face-to-face interviews and a documentation study, were distinct yet interrelated in the research process.

In the light of the discussion pertaining to the different research methods used in the research, it is necessary for a description to be given of the data collection process that was used.

6.9 DATA COLLECTION

As highlighted by Robson (2002:385), the central and indispensable part of the real world enquiry is the collection of data, which entails a systematic approach to the task. The same author adds that the focus of the research, the research question and the research strategy for the

particular research are important as these issues will determine the various methods used to collect data.

The data collection process entailed the use of a one-shot case study that is exploratory in nature, and the data required was collected in two phases. The first phase involved 19 structured in-depth face-to-face interviews with employees from Absa's Delivery Channel Services Department, mobile network operators and mobile phone manufacturers. The second phase was the documentation study, which entailed the analysis and review of 14 articles dealing with Absa Mobile Banking.

6.9.1 Phase one: structured in-depth face-to-face interviews

It should be noted that the first phase consisted of three stages and the first stage refers to the interviews with Absa staff members. Furthermore, the second stage entailed the interviews with the mobile network operators and lastly the third stage refers to the interviews held with the various mobile phone manufacturers. The interviews held with the respondents are presented in Tables 6.9.1a, 6.9.1b and 6.9.1c:

- Stage 1: Absa

Table 6.9.1a: Interviews with Absa employees from the Delivery Channel Services Department

Company	Name	Designation	Date	Place
Absa	Ms J. van Rensburg	Project Manager	6 September 2005	Absa Towers
Absa	Mr J. Jacobs	IT Developer	8 September 2005	Absa – Randburg
Absa	Mr C. Very	Head of Delivery Channels	9 September 2005	Absa Towers
Absa	Ms S. van Oppel	Alliance Manager	13 September 2005	Absa Towers
Absa	Mr P. Cohen	Marketing (mobile)	14 September 2005	Absa – Mooi Street
Absa	Mr M. Kazi	Manager: New Product Development	14 September 2005	Absa Towers

Absa	Mr T. Pieters	IT Project Manager Mobile	15 September 2005	Absa – Randburg
Absa	Mr K. van Wyk	IT (technical strategist)	21 September 2005	Absa Towers
Absa	Mr C. Louw	Channel Manager	21 September 2005	Absa Call Centre – Auckland Park
Absa	Mr R. Bouwer	Marketing (mobile)	27 September 2005	Absa – Mooi Street

- Stage 2: mobile network operators

  Furthermore, the second stage of the study entailed interviews with the mobile network operators, but it should be noted that interviews were only conducted with MTN and Cell C. Two requests for interviews with Vodacom were declined as it was explained that the information is confidential and cannot be disclosed to parties outside Vodacom. It was also said that all the relevant information is available on the Vodacom website, and statements made in this regard are posted in the media centre of the Vodacom website.

Table 6.9.1b: Interviews with mobile network operators

Company	**Name**	**Designation**	**Date**	**Place**
1. MTN	Mr A. Vermooten	Network Commerce Manager	15 September 2005	MTN
2. Cell C	Mr T. Walter	Manager: Product	30 September 2005	Cell C

A total of seven interviews were conducted with mobile phone manufactures, also called device makers as these are the technology enablers. These include SAGEM, i-Mate, Siemens, PalmOne, Blackberry, Motorola and Samsung. The only manufacturer not contacted was Alcatel because the website of this manufacturer explains that the focus of this brand is on the development of infrastructure, applications and services to broadband users rather than the primary goal being mobile phone manufacturers (Anon., 2005g). This is currently not the main focus area of Absa Mobile Banking. Three other requested interviews

were not granted, namely Nokia, Sony Ericsson and LG. Although requests for interviews were made to these companies by means of numerous telephone calls and emails, no response was received from Sony Ericsson and Nokia however, LG replied by means of an email explaining the position of LG on mobile banking (see Appendix F).

- Stage 3: mobile phone manufacturers
  As illustrated in Table 6.3, interviews with the various mobile phone manufacturers included the following respondents:

Table 6.9.1c: Interviews with mobile phone manufacturers

Company	Name	Designation	Date	Place
1. SAGEM	Mr C. Liebenberg	Key Account Manager	28 September 2005	Studio Park – Endemol building
2. i-Mate (LEAF Wireless)	Mr R. van Staden	Manager	5 October 2005	LEAF Wireless
3. Siemens	Mr G. Cress	Divisional Manager: End-to-end Applications	9 November 2005	Siemens
4. PalmOne	Mr A. Fittinghoff	National Brand Manager: Palm	14 October 2005	S. Bacher & Co.
5. Blackberry	Mr C. de Villiers	Business Manager	20 October 2005	Sandton Intercontinental Hotel
6. Motorola	Ms J. Humphries	Marketing and Business Development Director: Mobile Devices Business	21 October 2005	Motorola
7. Samsung	Mr R. Brites	Manager	27 October 2005	Samsung

In the light of the data collection methods discussed, it is relevant to emphasise the appropriateness of the utilisation of the Mobey Forum White Paper (Anon., 2004p) as it was used as a template and guideline in the development of the interview schedules for all three stages of phase one. In 2001, Mobey Forum Mobile Financial Services Ltd released extensive

documentation called the Preferred Payment Architecture 1.0 and the financial industry's consolidated requirements on mobile financial services were stated in this document for the first time. This document proposed an architectural model and a technical solution that would satisfy the needs of all parties involved in the mobile financial services arena. Further work in the area led to a document in September 2004 called the Mobey Forum White Paper on Mobile Financial Services (v.1.1) (Anon., 2004n), which constitutes a white paper on the principal requirements of Mobey Forum on mobile financial services. The use of the Mobey Forum White Paper (Anon., 2004p) as a template offered the structured interviews a specific set of questions that had to be dealt with in the interview, thus offering format and structure to the interviews. The credibility of this white paper is acknowledged by authors such as Ayadi (s.a.) as well as Gross *et al*., (2004) as this document has been integrated and utilised in research conducted by these authors. As stated by Ayadi (s.a.), Mobey Forum, which is the developers of the Mobey Forum White Paper (Anon., 2004p), is a think tank of leading financial institutions and actors of the telecommunication industry joined by technology operators and consultants.

The Mobey Forum White Paper's (Anon., 2004p) main goal is to provide advice and information to the financial industry on how it can start offering mobile services to the customers. The Mobey Forum White Paper (Anon., 2004p) stipulates the industry requirements for the implementation of mobile financial services and, as was evident in the interviews, is an acknowledged document in Absa's Delivery Channel Services Department. Moreover, the use of the Mobey Forum White Paper (Anon., 2004p) in the research has assisted in the investigation of how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. During preliminary interviews with Van Rensburg (2005) at Absa, no specific document was highlighted that forms the benchmark followed by Absa Mobile Banking to ensure that mobile banking industry requirements are met. The Mobey Forum White Paper (Anon., 2004p) was selected after an extensive Internet search was conducted. Furthermore, an interview was also held with a librarian at the University of Johannesburg Library and a subject search was conducted by the librarian. The Mobey Forum White Paper (Anon., 2004p) was the result of the search. Moreover, cognisance should be taken of the fact that the interview schedules used for interviews conducted during all three stages of phase one used the Mobey Forum White Paper (Anon., 2004p) as a template and guideline. This tool offered structure to the interviews and ensured that the relevant issues pertaining to the industry requirements of mobile banking were covered.

Furthermore, the industry requirements identified by the Mobey Forum White Paper (Anon., 2004p) are divided into four principal categories, and it should be noted that these four principal categories form the core components of the research question and corresponding research aims. The four industry requirements of mobile banking are identified as follows, and each entails a number of sub-categories (see appendix A) (Anon., 2004p):

1. Customer proposition
- The user experience should be convenient.
- The consumer should have the freedom to choose a bank, operator and handset, and change them independently from each other.
- Mobile financial services should have wide acceptance and usability.
- The customer habit should be built by starting early and gradually improving and expanding the services.
- Technical and perceived security level should be high.
2. Business priorities
- Banks authenticate their customers while providing banking and payment services.
- The services proposition has to offer value for all the relevant parties.
- Business processes of different players have to remain independent of each other.
- The solution has to scale across all financial service opportunities.
- Branding has to also be available within mobile environments.
3. Technical issues
- Open and no-propriety technologies have to be used.
- Existing standards and solutions should be used, where possible.
- Technological solutions have to enable independence between banks, operators and mobile phones.
- End-to-end security (message integrity and confidentiality), secure authentication, and non-repudiation have to be guaranteed.
4. Implementation issues
- Implementation costs to banks, merchants and consumers have to be relatively low.
- Time-to-market is of critical importance.

Schedules were used during the various interviews to ensure that the necessary constructs, as identified in the Mobey Forum White Paper (Anon., 2004p), were discussed. As illustrated in appendices B, C, D and E various interview schedules were developed. The main point of

departure for every interview schedule was that the Mobey Forum White Paper (Anon., 2004p) offered a framework and structure for structured in-depth face-to-face interviews, as it was used for the formulation and development of the questions contained in the various interview schedules. During the interviews, a dictaphone was used with the permission of the respondents and this was done to simplify the process of transcribing the interviews. By recording the interviewee, a complete record of data was processed and this was done to ensure that no data was lost. Each interview varied between 45 minutes to an hour and was done at the offices of the respondent as this was convenient for the interviewee. Moreover, the four principal categories, namely customer proposition, business priorities, technical issues and implementation issues with all the identified sub-sections, were covered in every interview schedule developed. The following schedules were developed:

- The first interview schedule contained in Appendix B was developed for the respondents from the Absa Delivery Channel Services Department that are responsible for the delivery of Absa Mobile Banking. This schedule is based on the four principal categories which are identified as the requirements for mobile banking. The questions were formulated using the industry requirements, namely customer proposition, business priorities, technical issues and implementation issues, as identified in the Mobey Forum White Paper on Mobile Financial Services (Anon., 2004p) (see Appendix A).
- A second interview schedule was developed for the Absa Delivery Channel Services Department employees involved with technological development and support with regard to Absa Mobile Banking (see Appendix C). It should be noted that a unique schedule was developed for these staff members as these individuals primarily deal with technical issues and gaining information about the technological issues surrounding Absa Mobile Banking, and could supply information specifically pertaining to technological issues. Consequently, this interview schedule only covered the third and fourth categories of mobile banking industry requirements as specificied by the Mobey Forum White Paper (Anon., 2004p). These included technical issues and implementation issues.
- The third interview schedule is the framework used when interviews were held with the representatives from mobile network operators (see Appendix D). This interview schedule contained questions dealing with all the identified categories of requirements by the Mobey Forum White Paper (Anon., 2004p), namely customer proposition, business priorities, technical issues and implementation issues. The questions were similar to the first interview schedule used for Absa's Delivery Channel Services Department, but were adjusted in such a

way as to assess how mobile network operators contribute to the implementation of the industry requirements of m-banking as a value-added m-business offering.

- Another interview schedule was compiled for the interviews held with the representatives of mobile phone manufacturers (see Appendix E). All four of the main categories of requirements were covered in the interview schedule to ascertain how the mobile phone manufacturers assist in the delivery of Absa Mobile Banking. Once again, this interview schedule was similar to the interview schedule used for Absa's Delivery Channel Services Department, but was adjusted to assess how mobile phone manufacturers contribute to the implementation of m-banking as a value-added m-business offering.

6.9.2 Phase two: document study

The documentation study forms the second phase of the research process utilised to investigate how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as an m-business offering. The sample of articles selected for this phase of the research was collected from the Internet and from material supplied by Absa. The sample consisted of 14 articles relating to Absa Mobile Banking, which were obtained by using the following Internet search engines and information sources:

- Google
- Hotbot
- Ask Jeeves
- Ananzi.com
- Absa website (www.absa.co.za)
- Vodacom website (www.vodacom.co.za)
- PowerPoint presentations provided by Absa Delivery Channel Services Department

The following key words were used to obtain relevant articles from the various Internet sites from the search engines:

- Absa
- Absa bank
- Absa Mobile Banking
- Absa Cellphone Banking
- Mobile banking in South Africa

- Mobile commerce
- Mobile commerce in banking
- Mobile commerce in South Africa

The following articles and information sources were sourced and utilised (see Table 6.5):

Table 6.9.2: Articles sourced for the Absa Mobile Banking one-shot exploratory case study

	Article title	**Year**	**Author**	**Date of access**
1	Driving home value to banking customers	s.a.	Herman Manson	17 December 2005
2	Absa, MTN link for cell banking	2000	Anon.	24 January 2003
3	Security: at the heart of financial services	2002	IDC and Nokia	August 2005
4	Electronic Commerce Strategies for Development: a Perspective from Absa Bank	2003	Alfie Naidoo (Absa)	August 2005
5	Cellphones can now locate Absa ATMs and branches	2004	Absa	20 December 2005
6	Online banking clicks into gear	2004	Anon.	20 December 2005
7	Called to account	2004	Charlene Clayton	24 May 2005
8	Cellphone Banking	2004	Anon.	August 2005
9	Cellphone Banking – frequently asked questions	2005	Absa	August 2005
10	Absa and Vodacom promotion info pack	2005	Absa	November 2005
11	Bank on convenience and reliability	2005	Absa Abacus	September 2005
12	Hooking up to push technology	2005	Absa Abacus	September 2005
13	Paytech Electronic Payment Summit	2005	Christo Very (Absa)	August 2005
14	MTN Mobile Banking	2005	MTN	20 December 2005

The data collection techniques for the two phases of inquiry were discussed in detail in this section and what follows is a discussion on how the pilot study was conducted.

6.10 PILOT STUDY

As emphasised by Neuman (2003:181), the reliability of the study can be improved by integrating a pre-test or pilot version of the measurement instrument before starting with the data collection process. Robson (2002:185) explains that the pilot study is a small scale version "of the real-thing" and a try-out of what is proposed, meaning that the feasibility of the research can be checked. Furthermore, Sarantakos (quoted by Strydom, 2002:210) emphasises that researchers should never start the inquiry unless they are confident that the chosen procedures are suitable, valid, reliable, effective and free from problems and errors, and all the precautions should be taken to avoid any problems that might arise during the study. As highlighted by Singleton (quoted by Strydom, 2002:211), the term pilot study is defined as the pre-testing of a measuring instrument where it is tested on a small group of people having characteristics similar to those of the target group of respondents. A similar definition is provided by Strydom (2002:211) who defines it as the process whereby the research design for a prospective survey is tested. This is seen as a small scale trial-run for the main inquiry and, as explained by Yin (quoted by Robson, 2002:185), the pilot study is a laboratory for the investigator whereby observation can take place of the different phenomena from many different angles or different approaches can be attempted on a trial basis. A more comprehensive definition but similar description is given of the term pilot study by Bless and Higson-Smith (quoted by Strydom, 2002:211) who define the pilot study as "a small study conducted prior to a larger piece of research to determine whether the methodology, sampling instruments and analysis are adequate and appropriate".

In addition, it should be noted that there are numerous reasons why a pilot study should be conducted, but the main reason is that it adds value. As explained by Strydom (2002:215), the suitability of the interview schedule or questionnaire is tested, which means that it can be adapted if necessary. Furthermore, the suitability of the data-collection procedure is tested to establish whether the selection procedure is the most suited for the purposes of the investigation. This is supported by Robson (2002:185) who explains that the feasibility of data collection procedures can be tested. Furthermore, Strydom (2002:215) adds that a thorough understanding of the population can be established with the use of a pilot study as it offers direct involvement with the social environment where the investigation will take place. Moreover, it offers the opportunity to acquire practical experience and take cognisance of the complexity and dynamics of the particular field of research. Robson (2002:185) as well as Strydom (2002:215) explain that the pilot study can be analysed in the same manner as the main inquiry data will be analysed and

it can be determined whether the responses reflect sufficient variation to test the study's hypotheses or research question or to reflect that the findings are valid. It also offers the opportunity to evaluate the study that is to be conducted, where modifications should be made and where attention should be focused.

A pilot study was conducted with Ms Jorietha van Rensburg of the Absa Delivery Channel Services at Absa Towers on 6 September 2005. In this pilot study, it was found that the questions used in the interview schedules did not need modification. It should be noted that Ms Van Rensburg did have knowledge of the Mobey Forum and addressed the relevance of this body in the pilot interview. Moreover, it is important to take cognisance of the fact that Ms Van Rensburg was used to conduct the pilot testing on the interview schedules used for the mobile network operators, mobile phone manufacturers as well as Absa technological development and support staff. It should be noted that the stipulated Mobey Forum White Paper (Anon., 2004p) industry requirements were used in exactly the same format and wording in all three stages of the interviews. This meant that the interview schedules used for the Absa Delivery Channel Services Department did not need separate verification.

After conducting the various interviews, a process of data analysis was undertaken to interpret the data gained during the research. The following section discusses the data analysis techniques utilised.

6.11 DATA ANALYSIS

It is imperative that a comprehensive approach to data analysis is applied as the analysis is a reasoning strategy with the objective of taking a complex whole and resolving it into parts (Poggenpoel, 1998:336). The basic process of data analysis entails comparing acts and statements with each other as well as the identification of themes. This also leads to the identification of underlying similarities and major differences in the data presented. There are basic guidelines that can be used in the data analysis and the approach used is that of Huberman and Miles (Robson, 2002:473). This is because Robson (2002:473) stipulates that the use of the Huberman and Miles approach is particularly useful in case studies. The Huberman and Miles approach to qualitative data analysis is only one of many techniques that can be used for data analysis. As stated by Poggenpoel (1998:340), there is no right or wrong approach to data analysis in qualitative research, but there are general guidelines. According to Morse (quoted by Poggenpoel, 1998:340), data analysis is a process of fitting data together, making the invisible

obvious and linking and attributing consequences. During this process there are three linked processes that need to take place, i.e. data reduction, data display, conclusion drawing and verification. As stated by Poggenpoel (1998:340), these processes occur before data collection, during research design and planning, during data collection and after data collection, and it is important to take cognisance of the fact that these three processes are concurrent flows of activity. The three processes are as follows (Poggenpoel, 1998:340):

1. Data reduction

   As stipulated by Robson (2002:476), the data reduction process starts when data is collected and when the focus of the study, sample and population decisions are being made. This is supported by Poggenpoel (1998:340) who states that data reduction entails that the potential universe of the data is reduced in an anticipatory way as the researcher chooses the research question, cases and instruments. Robson (2002:476) explains that data reduction takes place before and after data collection, and requires that data be reduced through the use of summaries, abstracts or memorandums. Furthermore, Huberman and Miles (quoted by Robson, 2002:476) emphasise that this is part of analysis and not a separate activity. The utilisation of this approach entailed the process of data reduction that took place throughout the study as this process occurred at the start of the study when all the relevant collected data on the topic of mobile banking and Absa Mobile Banking was reduced and research questions were formulated, the case study method was selected and data collection instruments were chosen. In support of the postulation of Poggenpoel (1998:34), further condensation of the data took place after data collection had occurred and this was done by looking for patterns and themes in the data that had emerged from the interviews and documentation study (Knight, 2002:188).

2. Data display

   The second step in the Huberman and Miles approach to data analysis entails data display and is an organised, concise assembly of information that permits conclusion drawing and/or action taking (Poggenpoel, 1998:340). It is imperative that a reduced set of data be created as a basis for thinking about its meaning. As described by Robson (2002:476), data display fulfils a vital function as data starts to make sense, justified conclusions can be drawn, and it becomes clear what further analysis is called for. The data display techniques used entailed the analysis of the transcriptions of the various interviews and the highlighting of any similarities, differences and odds that could be found in the documents that formed part of the documentation study. This was done by creating data tables that displayed the similarities, differences and odds found in the research results.

3. Conclusion drawing and verification

   As explained by Poggenpoel (1998:34), the conclusion drawing and verification process of the Huberman and Miles approach entails making interpretations and drawing meaning from the displayed data. As mentioned by Robson (2002:476), this process starts with data collection and takes place after data collection again. As emphasised by Huberman and Miles (quoted by Robson, 2002:476), this process should be accompanied throughout by a verification process, which is the reliability and validity of the data collection methods that are continually tested. The third process of the utilisation of the Huberman and Miles approach entailed that conclusions be drawn from the data collected. The verification of the data was done by means of the pilot study that was conducted and the use of a multi-research method case study. Furthermore, this verification process entailed the benchmarking of theory with the research problem and thereafter verifying the correlation between the different research aims and theoretical statements pertaining to the specific research aim.

6.12 RELIABILITY AND VALIDITY

Reliability is defined by Bostwich and Kyte (quoted by Delport, 2002:168) as the accuracy or precision of an instrument, as the degree of consistency or agreement between two independently derived sets of scores and as the extent to which independent administrations of the same instrument yield the same, or similar, results under comparable conditions. It can thus be said that an instrument is reliable to the extent that independent administrations thereof or a comparable instrument consistently yield similar results. This is supported by Zikmund (2003:375) who defines reliability as “the degree to which measures are free from random error therefore yield consistent results”. This will entail that similar results are obtained over time and across situations. Neuman (2003:185) adds that reliability literally means dependability or consistency. Mouton (1996:144) supports these definitions and defines reliability as the requirement that the application of a valid measuring instrument to different groups under different sets of circumstances should lead to the same observation. Consistency over time forms the core component of this definition.

Reliability was obtained during the research through the use of the Mobey Forum White Paper (Anon., 2004p) in the development of the interview schedules, which can be seen as a valid measuring instrument. The utilisation of the Mobey Forum White Paper (Anon., 2004p) as a template and guideline ensured structure and assisted in the development of the open-ended questions used during the interviews. It also provided structure and consistency throughout all

three stages of interviews conducted. Moreover, the conduction of the pilot study strengthened the reliability of the research. The reliability with regard to the documentation study is also relevant and, as advised by Strydom and Delport (2002:324), the reliability of the documents has been checked by referring back to the source of the document and correlating the data with the findings of the interviews.

In addition to the aforementioned, McBurney (2001:169) defines validity as an indication of accuracy in terms of the extent to which a research conclusion corresponds with reality. This is supported by Delport (2002:166) who states that a valid measuring instrument must measure what it is supposed to measure and must yield true measures of the variable being measured rather than random or constant errors. Furthermore, Delport (2002:166) highlights the fact that the term validity consists of two components. The first component is that the instrument actually measures the concept in question and, secondly, that the concept is measured accurately. In addition, Neuman (2003: 182) explains measurement validity as a construct that explains how well the conceptual and operational definitions mesh with one another. Furthermore, Neuman (2003:182) refers to a synonym for measurement validity as epistemic correlation. This refers to a hypothetic correlation between a specific indicator and the essence of the construct that is being measured. Neuman (2003:185) further emphasises that validity in qualitative research refers to the word truthful as well as authenticity, and this becomes more important than validity when using this approach to research.

In addition, it is imperative that triangulation be integrated and proven and, as defined by Babbie and Mouton (2004:275), the word triangulation refers to the use of multiple methods. This is also seen as a plan of action that will raise researchers above the personal biases that stem from single methodologies (Babbie & Mouton, 2004:275). By combining different methods of research in the same study, researchers can overcome the problems that exist with using only one method of investigation (Babbie & Mouton, 2004:275). This is supported by Erlandson (in de Vos, 2004:341) who states that triangulation refers to the method used by researchers to “seek out various different types of sources that can provide insight about the same events or relationships”. In summation, it can be added that methodological triangulation was obtained because both structured in-depth face-to-face interviews and the documentation study were used as data collection methods.

6.13 CONCLUSION

A qualitative research strategy was utilised as the most suited approach to investigate how Absa's Delivery Channel Services Department implements the industry requirements of mobile banking as a value-added m-business offering. The chosen methodology is exploratory in nature and takes the form of a one-shot exploratory case study that employs both structured in-depth face-to-face interviews and a documentation study and this is described as these form the two phases that have been integrated into the development of the case study. The first phase namely the structured in-depth face-to-face interviews, consisted of three different stages that contributed to the research process. These three different stages refer to the three groups of respondents that were interviewed using the prepared interview schedule based on the industry requirements for mobile financial services as stipulated in the Mobey Forum White Paper (Anon., 2004p). These three different stages of interviews were developed after identifying the relevant role players in the m-commerce value chain (Müller-Veerse, 2002:15) that contributes to the delivery of m-banking. The three stages of interviews are, firstly, the Absa Delivery Channel Services staff that are responsible for the delivery of Absa Mobile Banking. The second stage refers to the interviews conducted with the mobile network operators and the third stage refers to the interviews conducted with the mobile phone operators. Moreover, the second phase of the research methodology refers to the documentation study that entailed the in-depth analysis of 14 articles and documents related to Absa Mobile Banking.

The research focused on the implementation of industry requirements of mobile banking as a value-added m-business offering by Absa's Delivery Channel Services Department and the utilisation of the Mobey Forum White Paper (2004) (Anon., 2004p) has been crucial in ascertaining results with regard to the research question and research aims. The industry requirements of mobile banking as identified in the Mobey Forum White Paper (Anon., 2004p) have formed the categories dealt with in the structured in-depth face-to-face interview. It should however be noted that during the interview with the technological support and development staff at Absa's Delivery Channel Services Department, only two of the categories were covered because of the limited knowledge of these individuals regarding the other categories. The remaining three structured interviews dealt with all four of the industry requirements for mobile banking.

In addition, it should be noted that there were certain limitations linked to the methods used. Firstly, time was a major issue in the case study and due to the fact that mobile banking is a very

dynamic field, a research study conducted at a later time on the same unit of analysis, using the same respondents and using the same case study, may produce different results.

In the following section, the results of the data obtained and processed are interpreted so as to reach a final conclusion.

CHAPTER 7: FINDINGS AND INTERPRETATION

7.1 INTRODUCTION

The findings garnered while conducting specific research on how Absa's Delivery Channel Services Department implements mobile banking (m-banking) as a value-added mobile business offering will be illustrated in depth. The data-collection method entailed a two-phase approach that consisted of structured in-depth face-to-face interviews in the first phase. The second phase involved the documentation study. The first phase consisting of interviews entailed three stages, and each one of the stages entailed a different party that was interviewed to create a better understanding of Absa Mobile Banking as a value-added m-business offering. The first stage of the interviews consisted of structured in-depth face-to-face interviews held with the respondents from Absa working in the Delivery Channel Services Department. These respondents are employees responsible for mobile banking and Absa staff in a technological support and technology development position working in this department. The second stage comprised interviews held with South African network operators such as MTN and Cell C, and the last stage entailed interviews conducted with various mobile phone manufacturers. During the interviews, a number of interview schedules were utilised, and these were developed using the Mobey Forum White Paper (Anon., 20054u) as a guideline. The industry requirements for mobile banking stipulated in the Mobey Forum White Paper (Anon., 2004p) are the four main categories addressed. The findings pertaining to the four categories and the issues related to them, will provide the foundation for the interpretation of data, which will then be analysed within the context of the existing literature pertinent to the topic. As such, the Huberman and Miles data analysis method was utilised, whereby the processes of data reduction, data display as well as conclusion drawing and verification took place. The main categories to be discussed are the four requirements for mobile financial services specified by the Mobey Forum White Paper (Anon., 2004p) which include customer proposition, business priorities as well as technical and implementation issues.

The first section pertaining to customer proposition expands on the first research aim relating to the determination of how Absa's Delivery Channel Services Department implements customer proposition as a value-added m-business offering, and deals specifically with issues such as the following: user experiences that should be convenient, the consumer's freedom to choose handset or operator, financial services that should be widely acceptable and usable, consumer habit as well as technical and perceived security. Throughout this section, reference will be made

to the theoretical statement pertaining to the concept of customer proposition. This is followed by an analysis of the research aim pertaining to the determination of how Absa's Delivery Channel Services Department implements business priorities as a value-added m-business offering, which refers specifically to issues that include the authentication process, the fact that the service proposition needs to add value to all the relevant parties concerned, business processes that need to remain independent, the scalability of the solution offered, and then branding in the mobile environment. The discussion will then proceed to an explanation of the third research aim that pertains to the determination of how Absa's Delivery Channel Services Department implements technical issues as a value-added m-business offering, and in this discussion, emphasis is placed on the advantages offered when using open and non-propriety software to deliver the financial solution. The discussion on technical issues deals with the delivery of a mobile financial solution which refers to end-to-end security, the secure authentication of users, and the guarantee of non-repudiation. Furthermore, the final research aim will be addressed to establish whether Absa's Delivery Channel Services Department implements implementation issues as a value-added m-business offering. The category of implementation issues deals specifically with two matters, firstly that implementation costs should be low to the bank and, secondly an evaluation of whether Absa Mobile Banking has been marketed to the consumer at the right point in time taking into account handset development, infrastructure and the development of the market. Similar to the other research aims, the final research aim will be linked back to the theoretical statement pertaining to this category. It will be explained to what extent the findings correlate with the relevant theoretical statement. Finally, the implications of the findings will be discussed and recommendations for further research projects will be made.

7.2 CUSTOMER PROPOSITION

Table 7.2 presents a summary of the key findings pertaining to the category of customer proposition. This category consists of five key elements, and the key results obtained by means of interviews will be discussed with the integration of the results gathered from the documentation study. The five key elements of this category include the following (Anon., 2004p):

- The user experience should be convenient.
- The consumer should have the freedom to choose bank, operator and handset, and change them independently of each other.

- Mobile financial services should have wide acceptance and usability.
- The customer habit should be built by starting early and gradually improving and expanding on services.
- Technical and perceived security levels should be high.

Table 7.2: Summary of key findings pertaining to customer proposition

Section A: Customer proposition				
Sub-section	**Absa**	**Network operators**	**Mobile manufacturers**	**Documentation study**
The user experience should be convenient.	• Convenience is based on the following: - mobility, - easy-to-use, - fast-to-use and; - value for money.	• Network operators offer a seamless activity between network operator and bank. • Absa Mobile Banking can be delivered as a network-agnostic service.	• Convenience is offered due to the anatomy of the handset being customised.	• The elements of convenience are as follows: - a menu structure; -WIG server; and; - mobility.
The consumer should have the freedom to choose bank, operator and handset, and change them independently of each other.	• Functions with Vodacom and MTN as network operators. • Cell C users do not have Absa Mobile Banking	• MTN and Vodacom are the only two network operators functional with Absa Mobile Banking. • Cell C cannot	• MTN and Vodacom are the only two network operators functional with Absa Mobile Banking. • Cell C cannot	• MTN and Vodacom are the only two network operators functional with Absa Mobile Banking.

	available as a value-offering. • Handsets need to be STK compliant handsets with WIG-enabled capabilities.	be used.	be used.	
Mobile financial services should have wide acceptance and usability.	• Absa offers full banking functionality on Absa Mobile Banking. • There is wide acceptability and usability. • Usability is due to the multiple payment product offered on Absa Mobile Banking.	• Many m-commerce applications can be loaded onto the phone.		
The customer habit should be built by starting early and gradually	• Free service bundled with Internet banking. • This service	• MTN is launching initiatives over the next 18 months to	• Value-added offerings • Customisa-tion	• Financial service is a natural extension of the Internet

improving and expanding the services.	is marketed extensively as a lifestyle proposition with pricing and bundling being the main elements that are marketed.	drive m-commerce.		as a financial solution and should focus on convenience.
Technical and perceived security levels should be high.	• The focus is on online security and not mobile security per se as this is not an issue. • Technical security is based around architecture that functions on PIN-driven access, secure encryption SMSs and a one-time password system.	• Network operators feel that they should exceed the bank's expectations to be successful.	• The use of username, password and the yellow lock at the bottom of the screen.	• Security is a focus area of the bank. • Uses tools such as SMSs, WIG server, PIN and password to deliver this service.

7.2.1 The user experience should be convenient

According to Dennis *et al*. (2004:5), Durlacher (quoted by Junglas, 2002:22) and Lindgren *et al*. (2002:107), ease and convenience are important characteristics of the New Economy. Ease and convenience are enabled by the Internet that fulfils a vital role within this economic model. As emphasised by Aldrich (1999:6), Castells (2001:66), Kourdi (2001:xi), Welfens (2002:8) and Whalen (2002), the significant impact of this medium has resulted in the New Economy also being referred to as the Internet economy. Furthermore, Aldrich (1999:6) and Welfens (2002:8) explain that the Internet enables a low-cost ubiquitous network that supports multimedia exchanges of digital information. These rich multimedia digital information exchanges have also brought about an environment where the Internet plays an important role with any retailer or supplier. Furthermore, the Internet has transformed a marketplace into an environment where business can be conducted at any time of day or week, which has led to the marketplace transforming into a market space where the consumer can function as a ubiquitous entity (Earl quoted by Turner, 2000:2). This has created an environment that offers convenience to the New Consumer functioning in the New Economy.

All the Absa respondents were questioned about whether Absa Mobile Banking offers a user experience that is convenient and it was explained that Absa Mobile Banking is primarily based on a customer value proposition of convenience as it offers banking anywhere and at anytime. As explained by Bouwer (2005), Cohen (2005), Kazi (2005), Louw (2005), Van Rensburg (2005) and Vrey (2005), the entire customer value proposition around Absa Mobile Banking is based on convenience. This finding concurs with the characteristics of the New Economy and it becomes evident in the interview conducted with Vrey (2005) who explains that Absa Mobile Banking offers “Point in time banking, banking anywhere, anyplace wherever you have mobile reception.” This concurs with the statement made by Cohen (2005) as a representative from Absa’s Marketing Department when he adds that, “It is being able to do your banking, wherever you are, whenever.” This finding is also supported by the documentation study when Naidoo (2003) addresses the same issue in a presentation to the United Nations Conference on Trade and Development in Tunis. In this presentation, convenience has been highlighted as one of the key characteristics of the e-individual and one of the key focus areas of Absa in service delivery. Similarly, this is highlighted in one of the documents provided by Absa, which explains that convenience is one of the key benefits that Absa Mobile Banking offers (Anon., 2005e). When referring to the fact that Absa Mobile Banking can be conducted irrelevant of time or location, i.e. functioning in a market space within the Internet economy, the postulation of Durlacher (quoted by Junglas, 2002:22) becomes important. Durlacher (quoted by Junglas, 2002:22)

explains the concept of ubiquity and describes it as networks that can fulfil the need for both real-time information and for communication anywhere, independent of the user's location. Furthermore, the convenience offered within Absa Mobile Banking correlates with the fifth characteristic of m-commerce identified by Junglas (2002:22), namely that m-business offers portability. The portability factor is enhanced by the fact that physical boundaries set no limitations and business can be conducted on a global scale (Leer, 2000:1). The consumer functioning in this environment is empowered with a "one box" device, i.e. the mobile phone, which allows the individual to function as an entity that is *always on* and can conduct transactions and do banking anywhere and at any time (Anon., 2002e). This correlates with the mobile business classification scheme by the ARC Group (Leem *et al.*, 2004:7), which explains that timeliness and remote access are two of the characteristics of mobile business. With regard to Absa Mobile Banking, timeliness does play a role, as updated information regarding the users' account can be sent irrelevant of time or place. Furthermore, this information is accessed by using remote access such as the mobile phone.

Absa's Mobile Banking and the convenience of this service have been evaluated in terms of three different aspects, namely how easy it is to use this solution, how fast it is to use and, lastly, the value for money that this solution offers the consumer. Firstly, with regard to Absa Mobile Banking being an easy-to-use solution, it became clear from the interviews conducted with all Absa staff that the Absa Mobile Banking solution runs on a menu-driven application that entails three simple steps that consist of the input of data, the selection of account details and then the entering of the amount and mobile payment. This results in a speedy process that can be conducted conveniently from any location at any time. This finding corresponds with the theory of Lindgren *et al*. (2002:107) who state that the New Consumer is an individual that expects his/her requirements to be met quickly, and with high quality and convenience. As per the New Economy, the convenience factor is once again brought to light by one of the respondents of the interviews held with Absa staff, namely Van Rensburg (2005), who explained that Absa has developed relevant fit-for-purpose steps when setting up the mobile banking application. The advantage of only using relevant fit-for-purpose steps requires the consumer using the service only to remember an account number and a PIN number to utilise the service. As reiterated by Kazi (2005), "it's fixed menus, it's variable menus, so a client doesn't need to remember anything". Furthermore, as emphasised by Bouwer (2005), the use of a Wireless Internet Gateway (WIG) server is another contributing factor to convenience in the delivery of information within Absa Mobile Banking as this server uses SMSs to process data and transactions. Due to the fact that Absa Mobile Banking requires the use of WIG for the

processing of transactions, it becomes very difficult to enable the Absa Mobile Banking process if a phone is not WIG-enabled. Likewise, the process can be complicated as the download of the WIG application onto the handset is difficult and, as emphasised by Van Oppel (2005), a simpler registration process can be used to get onto Absa Mobile Banking.

Similarly, the interviews conducted with the network operators, namely MTN and Cell C, indicated that convenience is a focal point within the service delivery of these organisations to Absa. Walter (2005) from Cell C emphasised a personal sentiment when asked about the delivery of a user experience that is convenient, and added that network operators should try and create a seamless process between the bank and the network operator. The network operators focus on the development of an operating system where ease-of-use is a priority, which is reflected in the easy menu structure and screen flows. In view of this, Walter (2005) adds that Cell C aims to be the bearer of their service instead of offering it, thereby taking pride in it and responsibility for it. However, it is important to note that this respondent was referring to a general mobile voice service as Cell C does not offer Absa Mobile Banking. Moreover, the success that Absa has reached and maintained with regard to the offering of a convenient service is once again highlighted in the documentation study (Anon., 2005e) when it is explained that ease-of-use is offered due to the mobile banking menu that is downloaded onto the SIM card and it is easily accessible through the menu structure. The user can browse the menu, choose a transaction and just follow the prompts to complete the transaction. In a similar light, the mobile phone manufacturers also placed emphasis on the fact that the handset should allow for an easy-to-use solution. In addition, as indicated by Liebenberg (2005) from SAGEM, the anatomy of the phone is a very important aspect and contributes to how easy a solution can be used by a user. This was also reiterated by both i-Mate's Van Staden (2005) and De Villiers (2005) of Blackberry, who explained that the size of the screen and the use of a full QWERTY keyboard, which is a full keyboard similar to a personal computer keyboard, contributes to the ease-of-use of the mobile solution. Mobile handsets such as Blackberry and Palm offer a keyboard on the device that is exactly the same as a personal computer keyboard. Correspondingly, mobile phone manufacturers such as Motorola also emphasised the relevance of ease-of-use and, as explained by Humphries (2005), the Motorola handsets are customised to suite the lifestyle of the individual. This respondent added that Motorola handsets are enabled with technological capabilities such as 3G and WAP as well as designs that ensure an easy-to-use experience for the consumer.

Furthermore, the issue of ease-of-use corresponds with the postulations of Stone *et al*. (2001:6), Müller-Veerse (2002:8) and Roland Berger Research (Anon., 2002e), as these authors state that consumers are increasingly looking at multimedia networking solutions to compensate for time constraints. Similarly, Absa Mobile Banking allows the users to become device-agnostic as they can use the Internet, mobile phone or basic landline telephone to conduct transactions. In view of this, it should be noted that the Absa Mobile Banking solution offers the New Consumer the opportunity to utilise a convenient solution that can be accessed by means of a multi-communication channel approach when conducting transactions using Absa Mobile Banking.

The second element of the category dealing with convenience with regard to Absa Mobile Banking is related to how fast the Absa Mobile Banking application can be used by consumers. When asked how Absa offers a fast-to-use mobile banking solution, a significant number of respondents from the interviews conducted with all Absa staff indicated that the mobile banking screens were logical, fast and simplistic. It was also emphasised by these respondents that the mobile banking solution does not require any specific infrastructure or fixed telephone line. This was reiterated by Vrey (2005) who explained that the experience "is fast to use because it is logical, readable; the construct is logical and the terminology is simple". This offering of Absa resonates with the theory of Lewis and Bridger (2001:54) called the seven time warps of the New Consumer as Absa Mobile Banking can deliver an instantaneous service in the market space in response to the consumer that demands up-to-the-minute services. The second and sixth time warp refer to the fact that the acceleration of business is very important in the New Economy and that this Information Age has brought about a market space where events occur at a faster pace (Lewis & Bridger, 2001:55). Furthermore, the sixth time warp explains that New Consumers demand up-to-the-minute services and a just-in-time strategy has become the norm for businesses functioning in the New Economy (Lewis & Bridger, 2001:59). This finding also relates to the statement of Atkinson and Court (1998) who highlight that speed and innovation are "the new rules of the game" in the New Economy.

The final element of convenience stated in the Mobey Forum White Paper (Anon., 2004p) is that the user should be offered an experience that is perceived as value for money. The relevance of this is highlighted by Schmidt (2002) who states that technology seldom drives a market, but the value-add offered by services that are delivered by delivery mechanisms or technology can increase penetration. In view of this, it should be noted that value offered by a business can be delivered in two ways, namely directly by enhancing benefits to customers or reducing costs for participants or indirectly by increasing cross-selling, cutting the cost of acquiring customers or

reducing customers churn (Datta *et al*., 2001:72). When asked if Absa Mobile Banking offers value for money, a significant number of all Absa respondents indicated that it does. This practice corresponds with the theory of Prahalad and Ramaswamy (2004:4), Kunde (2002), Glover (2004) as well as Keller and Lehmann (2003), which states that organisations need to embrace a new approach called value creation. During the interviews with all Absa staff, it also became evident that Absa Mobile Banking delivers the first category of value, as categorised by Datta *et al.* (2001:72), meaning that benefits can be offered to customers or costs can be reduced. In the light of this response, Van Rensburg (2005) elaborated that value for money is seen as two different concepts by the customer and the bank. The customer measures value in terms of convenience, the time and cost of the transaction or the price that is paid for the service, and the perception that is linked to it. This kind of value can be related back to the theory dealing with the "Five Powers of the Connected Consumer" (Anon., 2002h) and specifically the first power called information access. This theory explains that the New Consumer has access to unprecedented amounts of information, which leads to the consumer having knowledge to make more informed decisions such as conducting transactions based on the most current information pertaining to a specific bank account. Furthermore, when referring back to the interviews held with Absa staff members, Van Rensburg (2005) added that Absa measures value by assessing a number of variables that include the evaluation of the application as a relevant and usable application. This respondent elaborated that it is relevant that the bank assesses whether there is sufficient capacity on the system for this application to function without breakdowns and how profitable this application is. Finally, it needs to be assessed whether this application will contribute to the lock-in of customers with the bank. The Absa client is offered mobile banking that is based on a value proposition of convenience, hence, the time and the cost of the transaction are two important issues that have been taken into consideration by the bank. This finding correlates with the findings from the interviews conducted with the network operators as Vermooten (2005) from MTN explained that the costs to the consumer are taken into consideration hence, price leadership is a goal of this service provider.

Furthermore, another major advantage of Absa Mobile Banking is the fact that it offers mobility, which also contributes to the creation of value for money. As explained by Kazi (2005), Absa Mobile Banking "enables the user to make payments while being on holiday". This was further emphasised in the interview conducted with Van Oppel (2005) who described the mobility factor of Absa Mobile Banking as a tool that enables the user to check a bank account from a rural area, meaning that the individual does not have to utilise any form of private or public transport to travel to a physical branch. This is reiterated by an Absa Cellphone Banking presentation

(2004n), which explains that one of the benefits of Absa Mobile Banking for customers is the fact that it gives access to account information anywhere and at any time, and specific transactions can be performed from any location. Van Oppel (2005) reiterates that this is a major benefit offered to Absa Mobile Banking users due to the fact that many lower-income individuals living in South Africa need to utilise the public transport system to travel to a physical branch only to find out that there is insufficient money left in the relevant account for a transaction to be processed. This relates back to the theory of leapfrogging developed by Cascio (2004), which explains that areas with poorly developed technology can move themselves forward through the adoption of modern systems without going through the intermediary phases. When this is discussed in the context of Absa Mobile Banking, it refers to the fact that the user of the mobile banking solution adopts modern systems such as mobile banking and can check bank balance details without ever visiting the website of the bank or using the website to participate in Internet banking. The finding can also be related back to the statement of Welfens (2002:19) who says that the digitalisation of communication in the New Economy has led to the delivery of services that aim to add value. In support of this, Earl (quoted by Turner, 2000:1) adds that the New Economy is based on the increased salience of information as a commercial tool as this new economic order has brought about an environment in which intangible assets like information and knowledge contribute as much or more to value creation than tangible assets (Mruz, 2000:1).

In conclusion, it was found that Absa Mobile Banking offers the user an experience that is based on convenience as this solution is made easy-to-use by means of logical screen flows and the use of simplistic technology such as SMS. Furthermore, it is also fast-to-use as it is driven by a menu structure that is downloaded onto the user's mobile phone. Lastly, it is found that Absa Mobile Banking also offers value for money based on the fact that it offers mobility, saves time (not going to a physical branch) and allows the user to conduct transactions anywhere, from any place and at any time. This aims to assist in the scarcities of time, attention and trust experienced by the New Consumer, thereby adding sustainable value to the customer as proposed in the theoretical statement of Anon. (2001l) who states that to drive sustainable value from mobile financial services, there are three important factors to consider: customer, customer and customer. Moreover, the theoretical statement supplied by Anon. (2001l) resonates within the Absa Mobile Banking practice due to the fact that the customer of the mobile financial solution is an important factor that is taken into consideration by Absa when trying to drive sustainable value.

7.2.2 The consumer should have the freedom to choose bank, operator and handset, and change them independently of each other

As stipulated by the Mobey Forum White Paper (Anon., 2004p), the network operator and handset used by the user are renewed in varying cycles, and changing any one of these should neither influence nor be dependent on the other. With regard to the aforementioned, it is important to pay attention to the statement of Lewis and Bridger (2001:4) stating that the New Consumer functioning in the New Economy has become a device-agnostic entity, meaning that no specific dependency is created around one specific device or channel. This has also resulted in a multi-communication channel approach that is used by the New Consumer when communicating or conducting business (Lewis & Bridger, 2001:4). The statement of Lewis and Bridger (2001:4) resonates in the findings pertaining to Absa Mobile Banking as consumers have the freedom to choose a handset or operator when conducting mobile banking with Absa.

Moreover, the freedom to choose a network operator when conducting Absa Mobile Banking is limited as the interview conducted with Walter (2005) from Cell C showed that Absa Mobile Banking can be conducted only when using Vodacom and MTN as the mobile network operator. This service is currently not available on the Cell C network. This finding is confirmed in Absa documentation (Absa, 2005d) stating that mobile banking is currently not available to Cell C users. Interviews with both Walter (2005) from Cell C and Vermooten (2005) from MTN elaborated on the reasons why Cell C is not one of the functional network operators offering Absa Mobile Banking. The main reason is that building a consumer base specifically around mobile banking is currently not one of Cell C's key priorities. Secondly, as stated by Walter (2005) from Cell C, this network operator started off with different priorities to the other network operators as it had to focus on building an infrastructure for Cell C as competitors such as Vodacom and MTN had been in existence for a long time and had already developed a technological infrastructure. Walter (2005) also emphasised that mobile banking does not add value to their subscribers at this point as this network operator is a developing entity and first needs to focus on the service delivery of a mobile telephone service. With reference to the issue pertaining to Cell C not being available for Absa Mobile Banking, it is imperative for, specifically the financial industry, to adopt wireless solutions that are network-agnostic, which means that one application can effectively run on all the existing wireless infrastructure (Anon., 2001i:4). In view of this statement, Absa should explore the possibilities and opportunities surrounding the issue of Cell C being a network operator that can be utilised when conducting Absa Mobile Banking as the impact of customers not being able to choose this network operator may lead to Absa clients being locked-in by other operators.

Furthermore, the Mobey Forum White Paper (Anon., 2004p) stipulates that the second element of the category pertaining to customer proposition focuses on the fact that the consumer needs to have the freedom to choose a handset and change it independently. A significant majority of the respondents from Absa such as Kazi (2005), Vrey (2005), Van Oppel (2005) and Cohen (2005) stated that there are a number of basic requirements for handsets conducting mobile transactions, including the fact that the handset needs to be a phase two handset, meaning that the phone has been manufactured after 1995/1996. Furthermore, the handset needs to be an STK-compliant handset functioning with a 32K SIM card and the handset needs to be a Wireless Internet Gateway (WIG) compatible handset. In addition, the freedom of the customer to choose a handset and change that handset independently was reiterated by both Walter (2005) from Cell C and Vermooten (2005) from Vodacom. This was made clear by Walter (2005) who stated that the network operator offers both network-agnostic and phone-agnostic services. This finding is in alignment with the postulation of Lewis and Bridger (2001:4) as network-agnostic and phone-agnostic services contribute to the delivery of convenience when using the service. This supports the postulation of Lewis and Bridger (2001:4) who state that the New Consumer has become a device-agnostic entity, which means a multi-communication channel is used when communicating or conducting business. Additionally, with reference to the multi-communication channel, it is important to note the fact that the New Economy creates the opportunity for brands offering products or services to strengthen relationships by creating experiences around every contact point with the consumer (Johansson, 2000:532). Hatcher (2005:38) also places emphasis on this issue and explains that context planning becomes very important when trying to offer this experience to the consumer. In the case of Absa Mobile Banking, the opportunity to create an experience and sufficient context planning is not possible when Absa Mobile Banking cannot be delivered to the consumers irrelevant of the handset or mobile network operator used by them. This finding within Absa Mobile Banking is not supported by theory as good practice and this is one area that needs attention.

In summation, the finding regarding the freedom of the consumer to choose a handset and operator correlates with theory that postulates that the creation of a device-agnostic individual in the New Economy is important. Absa allows for any handset to be used taking into consideration basic mobile phone handset technology standards, and this contributes to the sustainable value that is delivered to the consumer by means of Absa Mobile Banking (Anon., 2003a). Thus, Absa Mobile Banking practice correlates with the theoretical statement of Anon. (2001l) who explains that the customer is an important factor when trying to drive sustainable value. Absa is taking the

consumer and the value delivered to this consumer into consideration, but has to pay attention to the creation of a more network-agnostic m-banking system. This can be done with the activation of Cell C as one of the network operators for Absa Mobile Banking.

7.2.3 *Mobile financial services should have wide acceptance and usability*

The element dealing with the wide acceptance and usability in the customer proposition category is addressed in the Mobey Forum White Paper (Anon., 2004p) and stipulates that the mobile financial service should support multiple payment products that can be used in a variety of outlets. Furthermore, the Mobey Forum White Paper (Anon., 2004p) states that the acceptance of the mobile financial solution is very important as a mobile payment product that can be used in a very limited number of shops will never reach mass market, but will remain a niche solution.

Expanding on this statement in the context of Absa, it became evident from interviews conducted with Absa staff, such as Van Rensburg (2005), that Absa Mobile Banking offers full banking functionality on current banking products, meaning that all the products used and accessed in the traditional banking model can be accessed utilising Absa Mobile Banking. This was supported by Vrey (2005) who states that a user with a transaction-based account can transact from any account. Similarly, Van Oppel (2005) reiterated the relevance of the aforementioned statement and added that "…there is no limitation" when using Absa Mobile Banking. In addition, it also became clear from the interviews with the various respondents from Absa that Absa Mobile Banking includes all the traditional banking functionalities such as inter-account transfers, transfers to beneficiaries, once-off payments, and the setting-up and payment of frequent beneficiaries. This contributes to the usability of the solution as it becomes an application that is used by the New Consumer and/or Absa client rather than the person travelling to a physical branch of the bank. This finding supports research that shows that the New Consumer functions as an *always on* entity in a connected world and Absa Mobile Banking has become a tool that can be used anywhere and at any time (Lewis & Bridger, 2001:4). This is supported by the research of authors such as Watson (2001a) and Junglas (2002:24) who place emphasis on the construct of ubiquity as one of the elements of u-commerce. Ubiquity refers to the need to fulfil both real-time information and communication anywhere, independent of the user's location. Furthermore, Junglas (2002:22) adds that the creation of ubiquity also contributes to the development of reachability and accessibility, which creates a consumer that is reachable and accessible at any time and place. Moreover, Accenture (Anon., 2001h) emphasises that this allows for opportunity to provide real-time organisational information that is accessible to consumers and employees at the point in need. In view of this argument, it should be noted that

Absa has launched a service that adds value and drives the usability factor, as Absa clients can now locate the nearest Absa branch or ATM on their mobile phone. This location-based service, also referred to as l-commerce (Anon., 2002b), offers the advantage of linking Absa clients to people and not just places. This concurs with the theory of Durlacher (quoted by Junglas, 2002:22) that the New Consumer has a need to use various technological devices that fulfil the need both for real-time information and communication anywhere, independent of the user's location. Similar to the responses given by a number of Absa staff, the same approach to the offering of a unique service is supported by the network operators as the interview with Vermooten from MTN proved that these network operators allow for the enablement of as many m-commerce applications on the user's phone as the individual desires. This can also be related back to the element of instant connectivity identified by Müller-Veerse (2002:8) in the attributes of mobile communication. Absa Mobile Banking allows the New Consumer to be connected instantaneously to an account and can then function as an *always on* entity in a connected world. As a result, this allows the Absa client to function as a ubiquitous entity that can send and receive real-time information and communication anywhere, independent of the user's location.

In addition to the issues discussed that drive acceptability and usability, the bank is offering a mobile financial solution that is characterised by the second construct of u-commerce, namely uniqueness, as postulated by Watson (quoted by Junglas, 2002:23). Absa Mobile Banking offers a multiple number of payment products, thereby creating a unique service that allows individuals to access personal information and process transactions or do banking, irrelevant of their location or the time zone in which they function. This construct of uniqueness addresses the issue of personalisation and how the characteristics of localisation and identification are used to offer a unique service.

In conclusion, the growing acceptance and usability of Absa Mobile Banking, as a mobile financial solution, becomes apparent when it is considered that the mobile financial solution already had 48 500 registered customers at the end of January 2005, with a total transaction revenue of R83 million. Furthermore, Absa Mobile Banking offers a value-added m-business offering to all Vodacom and MTN users, meaning that this mobile financial solution could be adopted by over 95% of South African mobile subscribers. Absa Mobile Banking is currently bundled and packaged with Internet banking, and serves as a back-up service for Internet banking meaning that this service does not function as a stand-alone tool. In the light of this, it can be said that the Absa Mobile Banking is accepted and utilised, and offers customer value proposition as an m-business offering. This is in alignment with the theoretical statement

supplied by Anon. (2001l) who states that to drive sustainable value from mobile financial services, there are three important factors to consider: customer, customer and customer. Absa Mobile Banking has taken the customer into consideration when creating value within this mobile financial solution.

7.2.4 The customer habit should be built by starting early and gradually improving and expanding on the services

As stipulated by the Mobey Forum White Paper (Anon., 2004p), it is imperative that the habit of using mobile financial services be instilled in the user to ensure that the product is accepted and used widely. Furthermore, the Mobey Forum White Paper (Anon., 2004p) adds that this can be done by starting service provisioning with today's technologies and exploiting new technologies as they emerge. Furthermore, the Mobey Forum White Paper (Anon., 2004p) stipulates that once consumers begin to see the mobile phone as their wallet, providing access to trusted and accepted payment methods, the introduction of new concepts and services becomes much easier.

When taking the above discussion pertaining to customer habit into account, it becomes clear that offerings in the New Economy must be based on value to ensure continued support by consumers. As stated by Keller and Lehmann (2003:27), the value of the brand ultimately resides with the consumers, and brands need to prove themselves to a more sophisticated consumer functioning within the New Economy when trying to add value in this new economic order. When it was asked whether Absa uses initiatives to promote customer habit, it became clear that Absa acknowledges that customer habit is very relevant in the context of Absa Mobile Banking and the bank builds habit by means of various techniques. As explained by Absa staff such as Van Rensburg (2005), Absa Mobile Banking is bundled and packaged with Absa Internet Banking and this application is a back-up service for Internet banking, hence, pricing and bundling are two very important aspects of the product. Emphasising the statement of Van Rensburg (2005), Vrey (2005) reiterated the fact that customer habit is relevant and stated that incentives are offered from marketing perspectives to drive customer habit, including competition-driven marketing initiatives. This sentiment was also supported by Van Oppel (2005) from Absa who explained that incentive-based initiatives form part of the bank's customer habit programme. Incentive-based programmes offered by Absa Mobile Banking include a process where a customer will process five transactions and get five SMSs free of charge. In the light of this practice within Absa, the statement of Romaniuk (2004) becomes relevant as this author is of the opinion that consumers ignore marketing messages most of the time and will pay attention only when they need a product. Furthermore, Lewis and Bridger

(2001:8) add that the New Consumer suffers from a scarcity of attention and this is an important element that should be taken into consideration when offering an experience. It should be noted that the competition-driven marketing initiatives hosted around Absa Mobile Banking resonate with the statement made in an article dealing with brand equity (Anon., 2003b) as there needs to be a move beyond relationship marketing to a unique and consistent consumer experience due to the fact that a satisfied consumer in the New Economy does not always equal a loyal consumer. Absa Mobile Banking needs to continue with the delivery of unique and consistent consumer experiences, which contribute positively to customer habit.

In addition, when asking Kazi (2005) what initiatives Absa employs to build customer habit, the role that mobility plays in the Absa Mobile Banking and how this contributes to the creation of customer habit were highlighted. This respondent made it clear that Absa Mobile Banking can offer major convenience to the consumer while being on holiday or at a physical location where Internet access via a landline is very difficult. Kazi (2005) adds that consumers should be targeted before holiday periods or in holiday spots where the bank can then focus on increased usage. Correspondingly, Bouwer (2005) also placed emphasis on the marketing function and the relevance thereof in customer habit formulation and added that Absa Mobile Banking is marketed to move from a functional proposition to a lifestyle proposition. Cohen (2005) elaborated on the techniques used when educating these markets and explained that these include taking big prop phones into the market and explaining how mobile banking would work in the future and provide SIM cards. This corresponds with the postulations of Welfens (2002:21) who is of the opinion that more emphasis is placed in the New Economy on knowledge, which is reflected within Absa offering education on Absa Mobile Banking to various markets by means of marketing initiatives. According to Cohen (2005), the bank places emphasis on marketing to the flexi-market, which is done by educating this market, building awareness and telling people how simple the services are to use. The education to the flexi-market includes booklets, brochures and telling people what the proposition is and how it fits in with their lifestyle.

During the interview with Vrey (2005), this respondent added that customer habit is also cultivated by building added functionalities onto the offering, which also means that the convenience offered is emphasised. This concurs with the theory of Dennis *et al*. (2004:5) who explain that convenience is a core concept within the New Economy. Furthermore, this is supported by Louw (2005) from Absa who agrees that convenience plays a major role in building customer habit. In the light of the customer habit issue, the bank is assisted by the various network operators that are trying to establish customer habit with regard to m-commerce applications in the broader sense in South Africa. MTN planned to launch a new initiative every month for the next eighteen months, starting in the last quarter of 2005. The operators are also

introducing many relationship building strategies by sending users trials for new games as these are launched. This initiative is in alignment with the theory of Guissani (2001:172), which emphasises that unique consumer-focused entertainment plays an important role in the New Economy and it tends to be less time sensitive than the goal-oriented services. Examples of these "entertainment snacks" include mobile games such as "Who wants to be a Millionare?" offered over the mobile phone (Guissani, 2001:172). Similarly, mobile phone manufacturers also emphasise the relevance of building consumer habit and explain that it is done by means of value-added offerings that make the device an easier-to-use tool. Siemens offers what is called a phone pilot, which is a personalised assistant that assists the user in using the phone (Cress, 2005). This assistant will also collect relevant information from the Internet for the user that will assist in what the user requires. Brands such as Blackberry and Palm offer a full QWERTY keyboard, which ensures that the experience of using the phone is made easier for the user as it is a keyboard familiar to the user in many instances. Motorola offers a holistic eco-system to users and ensures that habit is formulated by being there for customers when problems arise, and for trade sales; thus, they believe ensuring a pleasant experience.

Moreover, Absa takes cognisance of important issues such as the Customer Experience Management (CEM) approach (Schmitt quoted by Kiska, 2002:28). CEM refers to the process whereby a customer's entire experience with a product or company is strategically managed and, as pointed out by Kiska (2002:28), CEM aims not only to capture what customers did in the past, but also to anticipate what they are going to do in the future and therefore gain a 360-degree focus on consumers, thereby enabling themselves to deliver value. As explained by Kiska (2002:28), CEM provides the means to retain valued long-standing customers as it takes a forward-looking view of what customers expect from suppliers. Referring back to the interviews conducted with the respondents from Absa's Delivery Channel Services Department, including the technological support staff, it can be said that Absa offers the consumer an experience, taking into consideration that time, trust and attention are important components that can contribute to the building of customer habit in the New Economy. In the light of the issue of customer habit, the theory of Watson (2001b), called u-commerce, becomes relevant. Absa offers mobile banking whereby the four constructs of u-commerce are inherently embedded in the offering and a number of these constructs are used to build customer habit. This is done in the following ways (Watson, 2001b):

- Absa Mobile Banking offers the New Consumer the opportunity to function as a ubiquitous entity as it entails the delivery of both real-time information and communication to clients about their bank accounts, independent of the user's location. This presents the client not

only with reachability from the bank's side, but also accessibility for the client to his/her bank accounts and the information pertaining to those accounts. This is clearly explained by Cohen (2005) from Absa, who states that Absa Mobile Banking is "anywhere, anytime banking. It is being able to do your banking wherever you are, whenever". Louw (2005), another one of the respondents from Absa, emphasised that Absa Mobile Banking offers mobility as this service is available 24/7 (24 hours a day, seven days a week) from the consumer's mobile phone handset. Similarly, Kazi (2005) highlighted the same issue and stated that "it is basically an ATM on your phone without the ability to talk back". This corresponds with the opinion of authors such Raschke and Kelly (2002:2) who state that wireless services are natural extensions to financial institutions' online offerings, allowing retail and commercial customers to access innovative, personalised services at their convenience. It also corresponds with the theory presented by Lewis and Bridger (2001:8) called the seven time warps of the New Consumer, specifically the fourth time warp, which stipulates that the New Consumer has become an individual that wants to shop and function around the globe at any time of day or night for seven days of the week. With reference to the above discussion regarding ubiquity, it is evident that Absa Mobile Banking integrates a number of initiatives based on creating a ubiquitous consumer to build customer habit around the bank's mobile financial solution.

- Absa Mobile Banking offers uniqueness as a mobile financial solution because it offers personalised up-to-date information to people about their respective bank accounts. The fact that the location of the individual using Absa Mobile Banking is irrelevant contributes to the delivery of a unique service within the banking industry. Furthermore, uniqueness is created as the service identifies the users and the relevant banking details or account information of the individual by entering PIN and account numbers. This corresponds to the theory supplied by Johansson (2000:532) who states that the New Economy is relationship driven, and customised and personalised information is important to the consumer. Furthermore, Johansson (2000:532) elaborates that the New Economy is structured on a one-to-one relationship that exists between buyers and sellers, and the seller has the opportunity to offer customised products and services to the buyer at competitive rates. This is also reiterated by Pattmore and Renner (quoted by McGovern, 1999:336) and in the same way Heil (quoted by McGovern, 1999:336) states that "relationships are the currency of the future", and the offering of a unique service within the New Economy is imperative.
- Universality, as a u-commerce construct developed by Watson (quoted in Junglas, 2002:22), describes the issue of mobile handsets being universally usable in an environment. Universality is a problematic issue that is taken into consideration with Absa Mobile Banking

as this banking solution is both dependent on a mobile network as well as a mobile device used to process the transaction and offer a service to the consumer. As explained by Cohen (2005), Vrey (2005) and Van Oppel (2005), the handset used when conducting Absa Mobile Banking needs to be WIG enabled. Kazi (2005) adds that a 32K SIM card is needed and similarly Jacobs (2005) emphasises the need for a mobile phone that supports STK. This finding corroborates with the theory of Lindgren *et al*. (2002:51) who explain that mobile devices and wireless communication need to be assisted by technological requirements and standards that have to be met. With reference to Absa Mobile Banking, it should be noted that the bank requires the co-operation of Vodacom and MTN as the network operators for the delivery of the service. Furthermore, mobile devices with the specific requirements are needed to conduct successful mobile banking transactions. In summation, Absa Mobile Banking has still not completely succeeded in offering a universal service, which is due to technology restraints, handset incapability and only being functional with Vodacom and MTN.

- The last construct of u-commerce is unison, which refers to the fact that data across multiple applications is integrated and the automatic synchronisation of these devices takes place (Junglas, 2002:24). As emphasised by Kazi (2005), the Absa Mobile Banking menu is similar to the ATM and Internet banking menu. Likewise, Van Rensburg (2005) explains that Absa Mobile Banking is not a stand-alone application. The respondent elaborated that it works as a value-added service and as a complementary service, but not as a stand-alone service. This correlates with the theory explained by Fourie (2001:114) who explains that the New Economy has led to the convergence of media, and a multi-communication channel approach is used by the New Consumer to communicate and conduct business. This is reflected in Absa Mobile Banking as the bank offers the Absa Mobile Banking user the opportunity to utilise a multi-communication channel approach when doing banking, and the transactions reflect on all databases of the bank as the automatic synchronisation of all the devices takes place.

From the discussion pertaining to the building and expansion of customer habit as well as the four constructs of u-commerce postulated by Watson (2001b), it can be noted that Absa Mobile Banking is currently building customer habit. This is done by means of value-added offering services that contribute as benefits to the solution. This is further supported by the offerings of the network operators and mobile phone manufacturers, which also acknowledge customer habit and aim to establish value-add by means of the services and tools offered. Together with the network operators and various mobile phone manufacturers, Absa is currently trying to manage

the experience of the consumer with Absa Mobile Banking strategically means of pricing, packaging the solution, marketing initiatives and offering convenience. Thus, the practice within Absa Mobile Banking is in alignment with the theoretical statement of Anon. (2001l) who state that to drive sustainable value from mobile financial services, there are three important factors to consider: customer, customer and customer. From the discussion of Absa Mobile Banking, it can be deduced that the customer has been the focal point when the mobile financial solution aims to drive sustainable value.

7.2.5 Technical and perceived security level should be high

As stipulated by the Mobey Forum White Paper (Anon., 2004p), mobile financial solutions should have a high technical and perceived security level. This means that the user should be protected against fraud and hacking attempts in payments, and users have to be sure that the payment destination is authentic in order to avoid suffering financial losses. Furthermore, services have to offer the confidence that personal details will not be disclosed to any unauthorised party. As such, security is an important issue that is emphasised by Lam *et al*. (2003:2054) as well as Raschke and Kelly (2002:2) who reiterate that security is a major factor that plays a role in the adoption of m-commerce, and it is no longer a value-added feature, but a core requirement for conducting business. In support of the theory, the findings garnered from interviews conducted with all Absa Delivery Channel Services Department staff showed that technical and perceived security are two very important components in Absa Mobile Banking. Furthermore, Van Rensburg (2005) and Vrey (2005) explained that mobile banking security is integrated into the overall security programme hence, online banking security is very important and mobile banking is offered as a value offering that is part of Internet banking. As highlighted by both Van Rensburg (2005) and Vrey (2005), mobile banking security is integrated into the overall security programme and the marketing messages used in Internet banking and all the other channels. Van Rensburg (2005) reiterated that the focus is on online security and not only mobile banking security.

In addition, as explained by Absa staff such as Van Wyk (2005), Van Oppel (2005), Kazi (2005), Jacobs (2005) and Pieters (2005), the technical security of Absa Mobile Banking is secured with the use of PIN-driven access and one-time password functioning on secure encrypted SMS technology. This is confirmed by the Absa document on frequently asked questions regarding mobile banking (Anon., 2005e). The relevance of privacy in mobile banking refers back to the statement by Anon. (2002e) that privacy is a pertinent issue with the development of mobile business and specifically the invasion of the consumer’s personal space. This issue has been

addressed by Absa Mobile Banking as their offering uses secure SMSs to send information to and from the mobile device, thereby ensuring that the transaction is secure. As highlighted by Pieters (2005), the IT Project Manager Mobile at Absa, security is very network operator dependent, but the processing of secure transactions and the authentication of users are ensured with the assistance of Absa Mobile Banking technology. Furthermore, Jacobs (2005) highlighted that the *triple des encrypted* system is one of the technological innovative systems that Absa uses to ensure security. This system allows for encryption of the PIN number on the phone that not even the phone can decipher. This is also processed by Absa via a WIG server that has a transport server that converts the PIN number into a more legible entity. It should be noted that Absa Mobile Banking does not utilise WAP for the processing of mobile banking, but rather WIG as it is a menu-driven SIM card application. In comparison, WAP allows for the browsing of the Web. In view of the discussion pertaining to technology involved in the processing of transactions, authors such as Lam *et al*. (2003:2054) discuss the wireless protocol gateway as a fixed line agent for handheld devices introduced as a security mechanism for m-commerce. According to Lam *et al*. (2003:2054) the wireless protocol gateway enables the handheld device to connect to the application server indirectly through the gateway server. The end-user is authenticated through a simplistic password login and the gateway server in turn executes transaction protocols on behalf of the handheld device. As pointed out by Lam *et al*. (2003:2054) the aforementioned is the most basic framework for implementing security for m-commerce transactions. According to Vermooten (2005) of MTN this kind of technology is also used by MTN to ensure the security on the network operators' system. It also became evident from the interview with MTN that the organisation feels that they need to exceed the bank's own requirements to remain successful. In a similar vein, the mobile phone manufacturers also emphasised security in the interviews and explained that similar security systems such as the *triple des encrypted* system are also used by Blackberry (de Villiers, 2005). With regard to security, Cress (2005) of Siemens explained how simplistic tools such as username and passwords are used to ensure security on the handsets and i-Mate (Van Staden, 2005) referred to the use of the yellow lock on the bottom of the screen, which is similar to the lock used on Internet websites to ensure security. The meeting with these basic requirements correlates with the already established theory of Lindgren *et al*. (2002:51) who state that technological requirements and standards have to be met for the successful delivery or processing of technological solutions.

The findings gathered show that Absa's Delivery Channel Services Department implements customer proposition as a value-added m-business offering. This deduction is made due to the fact Absa's value proposition is based on convenience with the emphasis on fast-to-use and easy-

to-use services. Furthermore, Absa Mobile Banking offers the consumer the freedom to function as a device-agnostic, but only to a certain extent, namely as a network-agnostic entity. Moreover, the mobile financial solution offers an array of functions when using the mobile phone and focuses on making it a lifestyle proposition for the consumer. Lastly, Absa Mobile Banking functions with secure and sophisticated technical standards that allow secure transactions to be processed. Therefore, it could be argued that, all five issues pertaining to customer proposition are addressed by Absa Mobile Banking, thus contributing to the delivery of Absa Mobile Banking as a value-added m-business offering. It can thus be said that Absa Mobile Banking ensures that the consumer functioning in the New Economy is considered when driving sustainable value around this mobile financial solution.

Based on the above discussions pertaining to the customer proposition and the implementation thereof as an m-business offering, the following section presents a discussion on the research aim relating to the determination of how Absa's Delivery Channel Services Department implements business priorities as a value-added m-business offering. Moreover, an investigation regarding the authentication of customers by the bank will be conducted to explain how it is processed while the bank provides banking and payment services. This will be followed by a discussion on how the different parties involved are all offered value within Absa Mobile Banking and how these parties remain independent within the business process. This will be followed by explaining how Absa Mobile Banking scales across all financial opportunities and, lastly, an overview of the branding within this mobile financial solution will be provided. The theoretical conclusions relating to how business priorities are implemented as a value-added m-business offering form the foundation for the verification of the research findings associated with the specific research aim.

7.3 BUSINESS PRIORITIES

Table 7.3 presents a summary of the key aspects pertaining to business priorities as one of the four key categories stipulated in the Mobey Forum White Paper (Anon., 2004p). The results obtained by means of in-depth face-to-face interviews with staff from Absa's Delivery Channel Services Department, network operators and various mobile phone manufacturers are integrated with the findings garnered from the documentation study. These key results pertain to business priorities and are covered in five elements, including (Anon., 2004p):

- Banks authenticate their customers while providing banking and payment services.
- The service proposition has to offer value for all relevant parties.

- Business processes of different players have to remain independent of each other.
- The solution has to scale across all financial opportunities.
- Branding has to also be available within mobile environments.

Table 7.3: Summary of key findings pertaining to business priorities

Section B: Business priorities				
Sub-section	**Absa**	**Network operators**	**Mobile phone manufacturers**	**Documentation study**
Banks authenticate their customers while providing banking and payment services.	• Functions with a multi-level identification system that is based on a PIN and one-time password. • This is used in conjunction with a random verification number (RVN).	• The network operators play a role in security.	• Mobile phone manufactu-rers have no role to play.	
The service proposition has to offer value to all the relevant parties.	• Value is offered to all parties concerned. • A minority of the respondents feel that the bank's value	• Value is only offered to the two network operators involved, namely MTN and Vodacom. • These	• Mobile phone manufactu-rers gain revenue from the handsets that are sold.	

	can increase in time as the application is not used by enough users at this point.	network operators gain revenue from the SMSs sent to process the transaction.		
Business processes of different players have to remain independent of each other.	• The network operators play a major role in the independent business process. • The consistency of the service delivered by network operators can negatively influence the perception of the consumer as a client of the bank.	• Network operators play an independent role in the business process.	• Mobile phone manufac-turers play an independent role in the business process.	
The solution has to scale across all financial service opportunities	• Absa Mobile Banking offers consumers an application that scales across all financial	• Network operators have no role to play.	• Mobile phone manufac-turers have no role to play.	

	opportuni-ties.			
Branding has to also be available in mobile environments.	• Not branding oriented. • As the bank focuses on a "fit for purpose" strategy, branding will not contribute to the value offered to the mobile banking user.	• Network operators have no role to play.	• Blackberry handsets are currently delivering branded solutions to Interbank in Spain.	

7.3.1 Banks authenticate their customers while providing banking and payment services

As explained by the Mobey Forum White Paper (Anon., 2004p), effective customer authentication is the most important element in facilitating mobile payments. The Mobey Forum White Paper (Anon., 2004p) explains that the process involved with payment services entails that the institution liable for the payment, usually the issuing bank, will always be responsible for authenticating the user and the issuer has to be in control of the customer's authentication in order to be able to manage the corresponding risk. Furthermore, it is noted that the type of security used by the bank is dependent on the size of the payments made. This requirement places emphasis on the postulation of Henderson and Harrison (s.a.) who state that mobile communication has made it possible for the New Consumer to function in an environment driven by actions delivered in real time where time is of the essence. Being able to authenticate users while using banking and payment services allows for the delivery of real- time information that enables the timeous processing of transactions.

Furthermore, Henderson and Harrison's sentiment (s.a.) is shown to be relevant in the context of Absa Mobile Banking as the interview with Jacobs (2005) emphasised the relevance of the authentication process in the mobile banking solution. In the light of this, Van Rensburg (2005) elaborated that the authentication process entails an identification process that requires a PIN number and password from the user. Although it entails a multi-level identification process, it

should be noted that the network operators play a role in the security of the authentication process and not in the way that this application is presented to the user (Walter, 2005). In comparison to what was found in the interviews conducted with Absa staff such as Jacobs (2005) and Van Rensburg (2005), communication with the various mobile phone manufacturers proved that the manufacturers do not play a role in the authentication of Absa Mobile Banking, and this is a solution that is processed between the bank, the user and the network operator.

Furthermore, Vrey (2005) provided a brief overview of the system responsible for authentication and explained that Absa Mobile Banking uses a WIG server that allows for secure encrypted data transporting structured messages. These messages are communicated via the use of SMS technology whereby a one-time password approach is used. In support of Vrey (2005), Cohen (2005) explains that the authentication of users of the Absa Mobile Banking application is done by means of a Random Verification Number (RVN) system. This is due to the fact that push technology, such as SMSs, is used to process the data within the transactions. This corresponds with the theory of Müller-Veerse (2002:41) who describes the push strategy as one of the alternative methods that can be used in m-banking. In Absa Mobile Banking, the RVN system entails the allocation of an identity/number to a customer when registering for the service at the branch. In the event that the customer utilises the mobile banking solution, the authenticity of the user is measured against the identity that is registered at the branch. Furthermore, the user can only enable an existing account, which means the authentication happens in the branch where the combi-card is issued. The user receives both a card and a PIN number, and communicates this via SMS to the bank during a transaction. As emphasised by Van Rensburg (2005) of Absa, the multi-level identification system that has been developed ensures the effective consumer authentication of users on the Absa Mobile Banking system. The theory of McGovern (1999:336) becomes important in this context as it emphasises that the relationship built with the New Consumer is based on trust, and it has been shown that this is one issue that Absa pays attention to by creating authentication systems that ensure a reliable service and communicating it effectively to the consumer.

In conclusion, Absa Mobile Banking functions with a multi-level identification system that allows the New Consumer to function in an environment where data and messages are delivered and processed in real time. This is in support of the theoretical statement of Glick (2006) that consumers and business priorities are coming together in mobile technology, which has led to access to information and communication any time and anywhere becoming a selling point and a

necessity for companies. By creating an effective authentication system, Absa offers the user effectiveness and value in terms of Absa Mobile Banking.

7.3.2 The service proposition has to offer value to all relevant parties

As explained by the Mobey Forum White Paper (Anon., 2004p), there are various role-players in the field of m-commerce that have to approve some common rules with regard to m-commerce. The various role-players, such as network operators, mobile phone manufacturers, the banks and other entities involved, all need to benefit from the solution. Furthermore, the solution available has to offer an attractive business case for the all parties concerned. This sentiment is also reflected in the theory of Datta *et al*. (2001:78) who state that it is important for organisations functioning within mobile business structures to create partnerships with other parties so as to bring together complementary assets and capabilities. Partnerships form a very important component in the mobile business structure (Kumar & Zahn, 2002), which is further emphasised by Woolfall (2003) who adds that mobile business emphasises the need for partnering as value is to be added.

The relevance of partnerships and the value that these various relationships create were issues discussed in the interviews held with Absa employees, the network operators and the mobile phone manufacturers. From the interviews conducted with all Absa staff, it became evident that value is one of the key priorities of the bank when delivering value proposition as part of Absa Mobile Banking. As defined by Band (quoted by Clarke, 2001:136), value proposition refers to the relationship between supplier offerings and consumer purchases by identifying how the supplier fulfils the customer's needs across different consumer roles. Furthermore, the interviews proved that there are various opinions that exist around the issue of the value that is offered by the various parties in Absa Mobile Banking. The various partners involved in delivering Absa Mobile Banking include Absa, the network operators and mobile phone manufacturers. These three parties are all illustrated in the m-commerce value chain developed by Müller-Veerse (2002:15). Furthermore, it can be noted that all these partners contribute to the delivery and value creation in Absa Mobile Banking and gain value in the process. One of the respondents from Absa, namely Van Rensburg (2005), highlighted that all the partners gain some value when she said that, "I think everyone gains value and I think Absa gains value in terms of that they lock-in the customer and they offer a customer service. The network service provider gets paid for the transaction or airtime. The handset provider gets some money for the handset. Everyone gets value." Furthermore, this is supported by Vrey (2005) who agrees that all the parties are offered value and adds that the bank's value lies in customer satisfaction and network operators

pick up all the SMSs. The concept of partnerships used in Absa Mobile Banking corroborates with the definition supplied by Andersen and Narus (quoted by Woolfall, 2003) who define partnership as "a process where a customer firm and supplier firm form strong and extensive, social, economic, service and technical ties over time, with the intent of lowering total costs and/or increasing value, thereby achieving mutual benefit".

Similar to the opinions discussed above, Louw (2005) emphasised that the consumer gains value from the mobility that Absa Mobile Banking offers and the bank generates revenue as well as customer loyalty from the mobile financial solution. Furthermore, network operators generate revenue by the traffic that is generated on the network. However, in comparison to the value that the bank gains, it was indicated by Walter (2005) from Cell C that this network operator cannot compete with its competitors on value, as the Cell C network has only been in existence for four years compared to the competitors who have been functioning for about ten years. This respondent explained that it cannot currently offer its subscribers Absa Mobile Banking as a value-added m-business offering.

In comparison to the opinions stated by a number of Absa employees, Cohen (2005), a respondent from Absa Marketing, felt that value is not delivered to all the parties concerned in Absa Mobile Banking. As explained by Cohen (2005), "No, I am not sure if it does offer value to all those different parties getting involved." This respondent further justified this statement as follows: the consumer value is centralised around the value that is offered within the proposition of Absa Mobile Banking. The bank is the only party that can maximise more value from mobile banking as an application as there is only a small amount of people utilising the application. Cohen (2005) explains that, "…you have to get a critical mass… and you really need a lot of people. You're looking at 100 000 people to get a critical mass". It should however be noted that Absa Mobile Banking is being offered as part of the Absa Internet banking and this solution contributes to the value that is offered to Absa Mobile Banking clients.

Moreover, the theories of Mylonpoulos and Doukidis (2005:6) as well as Mayo (2002) deal with the concepts of value and partnerships, and take on a unique approach on how these concepts are seen. These authors explain that there are various important stakeholders in the ecosystem within which mobile business takes place. The concept of an ecosystem is also supported by Leem *et al.* (2004:480) who state that mobile business is positioned in a business ecosystem consisting of mobile telecommunications companies, content providers, mobile solution providers and consumers. Mylonpoulos and Doukidis (2005:5) describe that the mobile business ecosystem has four levels within the ecosystem, including the individual, the organisation, the industry and the society. All the different parties in this ecosystem contribute to value and these four levels of the

ecosystem can be reviewed in the light of Absa Mobile Banking as follows (Mylonpoulos & Doukidis, 2005:5):

- The individual refers to the Absa Mobile Banking user that does not function as an isolated entity and constantly adapts to accommodate new technologies. When studying the individual in this ecosystem, it is necessary to refer back to the consumer ecology as introduced by Nash and Shulby (2005:57). Similar to Nash and Shulby (2005:57), Mylonpoulos and Doukidis (2005:5) view the consumer as a resourceful entity in the system and the relevance of value is emphasised. As Mylonpoulos and Doukidis (2005:5) point out, the business ecosystem acknowledges that learning takes place on a collective level rather than on an individual level, which reflects positively on Absa, because as established, the focus of Absa Mobile Banking is on education with regard to the solution by means of advertising and marketing drives, as these contribute to the value that is offered by the mobile financial solution.
- On the second level of the ecosystem is the organisation, and here it is relevant that the organisation develops and uses the right business models, creates the right partnerships, designs the right business processes and manages the relevant change processes. This aspect is further emphasised by Raschke and Kelly (2002:9) who explain that financial institutions extending their services to wireless devices will need to partner with vendors and service providers with specific expertise in cryptography, embedded systems, protocols and implementation. Within the context of Absa Mobile Banking, the bank has created the relevant partnerships with network operators such as Vodacom and MTN. The bank has also developed business processes and manages these to deliver mobile banking as a value-added proposition to Absa Internet banking.
- The industry level of the ecosystem involves a number of entities and this level includes every layer of infrastructure or service, from security to roaming and payments. Absa Mobile Banking has addressed the industry level by developing a mobile architecture that is secure. The payment system has also been well planned and developed to such an extent that no major problems have occurred on the Absa Mobile Banking application.
- The fourth level of the ecosystem refers to the society level and the rebuilding of values and norms that are appropriate for mobile-mediated interactions. As stated by Vrey (2005), “it (mobile banking) is probably at a beginning stage of the opportune market”. This is further contextualised by Cohen (2005) who added that mobile banking in South Africa is very much in a growth phase and people are becoming more receptive to the type of technology. A significant number of the respondents from Absa, the network operators and the mobile

phone manufacturers made it clear that major changes need to take place in society with regard to users and their acceptance of technology before full growth can take place in Absa Mobile Banking.

In conclusion, the interviews conducted showed that Absa Mobile Banking offers value to all the relevant parties, including the network operators and mobile phone manufacturers. Network operators gain revenues while mobile phone manufacturers sell handsets that enable mobile solutions. Wireless Application Service Providers (WASPs) do not have to be investigated in the discussion on partnerships as they do not play a role in the Absa Mobile Banking business model. Overridingly, it can thus be deduced that the findings cited correlate with the theoretical statement of Glick (2006). This statement stipulates that consumers and business priorities are coming together in mobile technology, leading to access to information and communication any time and anywhere, becoming a selling point and a necessity for companies. This has been the case with Absa Mobile Banking as the bank has made the delivery of value a key priority by means of various initiatives. Furthermore, the impact of the positive relationships between the various partners should contribute to the continual successful delivery and value-add of Absa Mobile Banking as an m-business offering.

7.3.3 Business processes of different players have to remain independent of each other

According to the Mobey Forum White Paper (Anon., 2004p), it is not feasible for a bank to limit the service to customers using only a certain mobile phone service provider because many banks function in different markets in different countries around the world. Furthermore, the Mobey Forum White Paper (Anon., 2004p) stipulates that logistics may also add costs to mobile banking and make the process more complicated for the consumer, especially if the consumer has to visit many places or register with several companies to get services working. This mobile banking requirement supports the theory of Lewis and Bridger (2001:4) who explain that the New Consumer is a device-agnostic entity that uses a multi-communication channel to communicate and conduct business in the New Economy as s/he is driven by a scarcity of time.

The Absa Mobile Banking business process is to a very large extent a process in which the various players can function as independent entities. This was reiterated by Vrey (2005) from Absa, who indicated that the data carried by the bank is done independently and that the network operator does not carry any data but only the downloading function of the WIG enablement. The same respondent added that this is an important factor in terms of security as this data entails the personal banking data such as the PIN number and password as well as the account details of the

individuals. In the light of this, it is very important that the consumer realises that personal data is not accessible by any entity in the mobile banking ecosystem. In addition, Van Rensburg (2005) highlighted the independence in the business process when stating that Absa Mobile Banking functions independently, but is also dependent on other parties to a certain extent. This respondent further explained that the bank is completely reliant on the service rendered by the network operator and as emphasised by the respondent "…if the system is down, it will influence the customer experience". The relationship between the bank and the various service providers in the mobile banking ecosystem is managed by service level agreements (SLA), which ensure that quality and consistency form part of the service delivered. This practice resonates in the theory of Woolfall (2003) who explains that alliances that focus on services are important and make the m-business application more useful to people.

Furthermore, interviews with Absa employees and the network operators proved that Absa Mobile Banking only functions effectively with Vodacom and MTN as mobile network operators but not with Cell C, for reasons already established. During the interview with Walter (2005) from Cell C, it was explained that network operators see their relationship as completely independent. This respondent added that network operators are perceiving their role to evolve rapidly from that of a data company into that of a media company.

In summation, the business process involved with Absa Mobile Banking is explained by the bank and network operators as being independent although it is acknowledged that the quality of the service rendered by Absa is dependent on the consistency of the service rendered by the network operators. However, this dependency on the network operators will influence Absa's delivery of Absa Mobile Banking as a value-added m-business offering.

7.3.4 The solution has to scale across all financial service opportunities

The Mobey Forum White Paper (Anon., 2004p) clearly stipulates that mobile banking, as a financial solution, has to scale across all financial service opportunities and be flexible so that all types of financial services can be accommodated. Furthermore, the Mobey Forum White Paper (Anon., 2004p) states that inter-bank usage has to be guaranteed by some means. It should be noted that the scaling of Absa Mobile Banking as a financial solution can be viewed from two perspectives, namely the usability of the financial solution using all the accounts listed in the individual's Absa portfolio and then the reach of the solution to all different segments of the market.

During the interviews with Absa staff members, the question was asked: “Does Absa mobile banking scale across all financial opportunities?.” It was explained that Absa Mobile Banking offers full banking functionality on current banking products meaning that all the products used within the traditional banking model can be accessed utilising Absa Mobile Banking (Van Rensburg, 2005). The value that this scalability that Absa Mobile Banking offers correlates with the postulation of Clarke (2001:145) who states that m-commerce business models and strategies must offer user effectiveness and value by leveraging the unmatched advantages of wireless technology. Moreover, Absa Mobile Banking does offers a solution that scales across all financial opportunities as it covers all the segments of the target market. As indicated by Kazi (2005), Absa Mobile Banking covers all segments of the markets and the application caters for both individuals and businesses. This statement is supported by Vrey (2005) who added that Absa’s mobile banking covers all segments, including small businesses. In comparison to the two latter respondents’ replies, Louw (2005) is of the opinion that the bank does not and cannot utilise all opportunities. This respondent explained a very important issue when mentioning that “corporate banking over mobile devices will never happen” referring to the fact that major corporations do not have a need for corporate banking being done over mobile devices.

In conclusion, the deduction can be made that Absa Mobile Banking scales across financial opportunities when it is considered that mobile banking can be done from any account within the individual’s banking portfolio. This also supports the theoretical statement of Glick (2006) that consumers and business priorities are coming together in mobile technology, leading to access to information and communication any time and anywhere. With the offering of this financial solution over mobile telephony to a large segment of the market, Absa has utilised and optimised the advantages offered by wireless technology.

7.3.5 Branding has to also be available within mobile environments

The Mobey Forum White Paper (Anon., 2004p) emphasises that the potential to brand is important in terms of acceptance by all parties in the value chain. Furthermore, the Mobey Forum White Paper (Anon., 2004p) stipulates that the solution must allow for the visible branding of payment products (either on a plastic card or in some digital form on the phone) to be managed by individual institutions. The relevance of the aforementioned statement becomes apparent when the opinion of Bechtold (quoted by Gertsman & Meyers, 2001) is considered. According to Bechtold (quoted by Gertsman & Meyers, 2001) electronic and mobile marketing are extended dimensions of communication vehicles where the projection of the e-brand over a mobile device allows a brand’s identity and equity to be extended onto a mobile device. This

offers the organisation and marketer a very useful tool for the process of branding. As explained by Bechtold (quoted by Gertsman & Meyers, 2001), a total brand experience should be offered around the brand at all the points of contact with the consumers.

The results of the interviews conducted with all Absa employees show that Absa Mobile Banking is not branding oriented (Van Rensburg, 2005). It was however emphasised by Vrey (2005), Cohen (2005) and Van Wyk (2005) that Absa Mobile Banking takes place in advertising and marketing material as well as on the confirmation of the mobile transaction. In the light of this issue, Van Rensburg (2005) explained that branding on mobile banking is not appropriate as the design is not fit-for-purpose. In addition, Bouwer (2005) provided reasoning for the difficulty of branding on the Absa Mobile Banking application when stipulating that "SMSs are as short as possible and do not leave space for branding". In contrast to the responses that explained how difficult branding on Absa Mobile Banking is, De Villiers (2005) from Blackberry explained how the Blackberry handset offers the organisation the ability to push data and applications that are fit for the device and actually create an opportunity for branding. As explained in Abacus (2005f:67), the monthly staff magazine of Absa, "being in touch and online has become easier with BlackBerry's new push technology, which enables emails to be sent directly to the user's handset without the bother of dialling up to an Internet service provider". As explained by De Villiers (2005), Blackberry has had very successful projects with the branding of banks in the mobile banking environment. De Villiers (2005) explains:

> One of the banks that we work with extensively is a bank called Interbank in Spain and they have an online brokerage application where people can, obviously do other banking, but they can also manage all their staff portfolios, their retirement investments, their mortgage portfolio, everything. It has the ability to do that. What they do is they actually pay and subscribe for that service and Interbank actually pushes out Interbank branded applications right onto the device.

Subsequently, the interviews proved that the various employees at Absa and the mobile phone manufacturers have different opinions about the relevance of branding on the Absa Mobile Banking solution. These different opinions on the relevance of branding on Absa Mobile Banking exist in spite of the theory of Romaniuk (2004) who states that marketers should focus on maintaining clearly branded communication that can enhance existing memory structures. Romanuik (2004) also highlights that situational factors and events will determine when consumers will think about purchasing a brand and the only reason that a brand is not chosen is

based on the fact that the consumer is not aware of the brand at the time of making the purchase. In the light hereof, it can be noted that Absa Mobile Banking does not use the opportunity to enhance brand saliency by means of branding on the mobile financial solution.

Moreover, during the interview with Van Rensburg (2005), it was highlighted that Absa Mobile Banking is a back-up service for Internet banking and "…[i]t is currently bundled or packaged with Internet banking". Furthermore, consumers are requested to indicate whether they would like to receive marketing messages from Absa when signing up for Internet and/or Absa Mobile Banking. This is referred to as Mobile Permission Marketing (Kavassalis *et al.,* 2003:9) and it is a very relevant issue that needs to be considered by Absa in the context of Absa Mobile Banking. In the light of the above discussion pertaining to Mobile Permission Marketing, it should be noted that it is imperative for Absa to pay attention to the important statement of Pattmore and Renner (quoted by McGovern, 1999:336) who explain that the systematic building and maintenance of customer relationships are rapidly becoming a necessity in the New Economy. This is supported by Kavassalis *et al.* (2003:9) who add that the relationship with the consumer is based on permission that refers to the art of marketing to people who want to be marketed to, and doing it with anticipated, personal and relevant messages. As established, Absa utilises the Mobile Permission Marketing approach as permission is obtained from the consumers before any marketing material is sent to them via a mobile phone.

Finally, the impact of not having any branding on the Absa Mobile Banking application is an issue that the bank should investigate as this is not in accordance with the broader theory. Absa Mobile Banking is a useful tool that should be used to build brand saliency within the consumers and specifically on the mobile financial solution. In view of this, the current practice within Absa Mobile Banking does not correspond with the postulation of Clarke (2001:145) who stipulates that the unmatched advantages of wireless technology need to be leveraged in order for m-commerce to reach its full potential. Furthermore, the findings gathered from interviews held with Absa staff show most of these respondents do not think that there is currently any space for marketing on the mobile message in Absa Mobile Banking as this would only clutter the message. Furthermore, it should be noted that the practice in Absa Mobile Banking reverberates in the theoretical statement of Glick (2006) who explains that consumers and business priorities are coming together in mobile technology, but the recommendation can however be made that branding on Absa Mobile Banking could increase the brand saliency of this product.

The preceding section dealt with the implementation of business priorities and an evaluation was made of Absa Mobile Banking as a value-added m-business offering taking into consideration the various issues identified as part of business priorities by the Mobey Forum White Paper (Anon., 2004p). It can be deduced that Absa's Delivery Channel Services Department does implement business priorities as a value-added m-business offering. A secure, sophisticated authentication system presents a solution that offers value to all the parties involved in the m-commerce value chain developed by Müller-Veerse (2002:15). Based on the above discussions pertaining to the business priorities and the implementation thereof as an m-business offering, the following section presents a discussion on the research aim relating to the determination of how Absa's Delivery Channel Services Department implements technical issues as a value-added m-business offering.

7.4 TECHNICAL ISSUES

Table 7.4 presents a summary of the key aspects pertaining to the technical issues as one of the four categories stipulated in the Mobey Forum White Paper (Anon., 2004p). These results have been obtained from Absa staff members working in the Delivery Channel Services Department, network operators and various mobile phone manufacturers. The sample of respondents from Absa included a selection of employees specifically working on the technical and security aspects of Absa Mobile Banking. A documentation study has also been conducted regarding the technical issues of Absa Mobile Banking and the results obtained have been integrated to support the various strengths and weaknesses identified. The category of technical issues consists of four elements and are as follows:

- Open and non-proprietary technologies have to be used.
- Existing standards and solutions should be used, where possible.
- Technological solutions have to enable independence between banks, operators and mobile phones.
- End-to-end security (message integrity and confidentiality), secure authentication, and non-repudiation have to be guaranteed.

The following is a tabulated summary of the results pertaining to the category of technical issues:

Table 7.4: Summary of key findings pertaining to technical issues

Section C: Technical issues				
Sub-section	**Absa**	**Network operators**	**Mobile phone manufacturers**	**Documentation study**
Open and non-proprietary technologies have to be used.	• Open and non-proprietary technologies are used but only to a certain extent. • Existing technology is integrated with innovation.	• Network operators utilise open technology in the delivery of a network.	• Most mobile phone manufac-turers are using open and non-proprietary technology. • Aim to create a user-friendly handset.	• Uses open and non-proprietary technologies that include - a menu-driven structure and - 32K SIM card.
Existing standards and solutions should be used, where possible.	• Existing standards and solutions are utilised. • Innovation is integrated in creating a unique competitive functional service.	• Existing standards and solutions are used in the delivery of a network. • ICASA approval is very important in this industry.	• Existing standards and solutions are used in the delivery of a network. • ICASA approval is very important in this industry.	
Technological solutions have to enable independence between banks, operators and	• The bank, operators and consumer can function as independent entities in the	• Network operators function as independent entities in the business	• Mobile phone manufac-turers function as independent entities in the	

mobile phones.	delivery of service. • There is a certain level of co-dependency between the bank and mobile operators with regard to the quality of services delivered.	model.	business model.	
End-to-end security (message integrity and confidentiality), secure authentication, and non-repudiation have to be guaranteed.	• Utilises a system that ensures end-to-end security. • Uses a PIN number-based system to ensure authentic cation • Non-repudiation is also ensured with the use of the RVN system integrated with the PIN number	• End-to-end security is a very important issue with network operators.	• Mobile phone manufac-turers have no role to play in security with Absa Mobile Banking.	• Effective authentica-tion of users by using tools such as the RVN system.

	usage.			

7.4.1 Open and non-proprietary technologies have to be used

As specified in the Mobey Forum White Paper (Anon., 2004p), the solutions used in mobile financial services need to be based on open technological standards that do not require the payment of expensive license fees. Furthermore, the Mobey Forum White Paper (2004p) also states that the handsets and servers should work together seamlessly through standard interfaces between different manufacturers, and all the service providers should be able to enter markets smoothly.

With reference to the technical issues pertaining to Absa Mobile Banking, it can be noted that Absa utilises technology and a mobile business application that is open and non-proprietary but, this is only done to a certain extent. As explained by Vrey (2005), the head of Delivery Channel Services at Absa utilises a WIG platform and, as already established, this technology uses SMS as a bearer. Both WIG and SMS technology are categorised as solutions based on open standards. Furthermore, Absa also uses a 32K SIM card functional within an STK compliant handheld device. This is confirmed by a documentation study on Absa (Anon., 2005e) that states that the user needs a 32K SIM card to conduct Absa Mobile Banking as only a 32K SIM card has enough space for the banking menu to be loaded. With reference to the above discussion, the statement of Lindgren *et al*. (2002:51) becomes relevant as they explain that there are certain technological prerequisites that need to be taken into consideration for the mobile marketplace. Technological prerequisites refer to the sum of existing technology combined with people's access to that technology. In the light of this issue, the statement made by Walter *et al.* (2005:2) is important in the context of Absa Mobile Banking. Walter *et al.* (2005:2) emphasise the relevance of open mobile business applications being used as the advantage is that the mobile business application can span across heterogeneous client devices. The use of open mobile business applications is thus beneficial to Absa as it will enable the consumer to function as a device-agnostic entity using a multi-channel communication approach. Finally, the use of SMS, as the bearer of information in Absa Mobile Banking, can also be noted as the use of open and non-proprietary technology. Absa uses a seven-bit SMS, and not an eight-bit SMS in the mobile banking process. This entails a process where the user logs in and the phone then sends a seven-bit SMS to the network operator, which lands on its short message centre. The short message centre identifies the SMS as a seven bit and sends it on to the WIG server, which has a transport server that then converts the SMS into a more legible entity. As described in the theory of Schmidt (2002), WIG is one of the various technologies that enable mobile banking as a subset

of online banking. The PIN number that has been punched in by the user is encrypted between the phone and the service provider. This enables the transport server to send the message on to the security server. Furthermore, it then takes the PIN block-out of the URL, decrypts it and encrypts the PIN again into a different PIN block format. It is dropped back into the URL, which then sends the message (an HTP request and an actual test request) onto Absa. This proceeds through two firewalls and then picks a server, and thereafter the transaction follows.

In addition to the technology used, as discussed above, the front-end of Absa Mobile Banking uses existing technology as it uses existing standards. As highlighted by Louw (2005), all the information is portrayed on the screen using JAVA. Jacobs (2005) emphasised that the application has been developed in-house by Absa experts and the bank has developed their own view-handler for viewing wireless mark-up language (WML). In addition, a reference needs to be made to the technology platforms used in mobile business applications. Absa utilises IBM software packages with the middle layer being a Websphere platform. All the technology used by Absa Mobile Banking involves standard and existing solutions, and therefore makes it open technology that is used because it requires no major licence fees to be paid before it can be implemented.

With reference to the discussion on the proprietary aspect, it is important to note that solutions need to be easily available and should not require expensive licences as these should be based on standard interfaces between different parties (Anon., 2004p). This is reiterated by Stolz (2001:3) who explains that payment applications have to be compatible with every mobile phone, and every mobile operator should be functional internationally and must be universal and usable in every situation, i.e. online, travelling abroad or exchanging money between friends. In support of the use of open technology in Absa, the various respondents interviewed from network operators indicated that operators use technology that is seen as open and non-proprietary technology. This includes the use of well-known technology such as GPRS, EDGE, 3G and many others. Similarly, the mobile phone manufacturers indicated that open and non-proprietary technology is used in manufacturing the handsets as these protocols are driven by industry standards. In support of this statement, Fittinghoff (2005) from PalmOne and de Villiers (2005) from Blackberry added that open technology such as Palm OS, on Palm mobile handsets, and JAVA are used on Blackberry as open and non-proprietary operating systems.

In conclusion, it should be noted that the use of open and non-proprietary technology by Absa Mobile Banking allows this application to be utilised by most consumers and business entities in

the market. This should have a positive impact, as these individuals do not have to acquire expensive additional technology to access and use the mobile banking service rendered by Absa. Moreover, it can be noted that the Absa Mobile Banking practice resonates with the theoretical statement of Shi (2004:18) who highlights that it is relevant to address technical issues such as device limitations, usability, standardisation and the integration of different wireless technologies for mobile business to grow.

7.4.2 Existing standards and solutions should be used, where possible

The Mobey Forum White Paper (Anon., 2004p) also highlights that dealing with the use of existing standards and solutions is imperative in mobile financial services. According to the Mobey Forum White Paper (Anon., 2004p), existing infrastructure should be utilised according to stated requirements. This applies to both banking and payment technologies as well as the payer's architecture, which includes the use of SMS, WAP and open development platforms such as JAVA and Symbian. Interviews held in Absa indicate that this has been the case with Absa Mobile Banking as existing standards and solutions are being utilised by the Absa Mobile Banking in the delivery of the mobile solution. Absa Mobile Banking has been built on Absa Internet banking and the technology developed for the Internet component is exposed to mobile protocols. This is explained by Van Wyk (2005) who stated, "[s]o, as far as possible, we are saying that, what we have developed for Internet banking, if we can now basically expose that on the mobile protocols and enable that we can re-use it". Furthermore, existing standards are incorporated into Absa Mobile Banking as it utilises WIG standards and STK complaint devices, which means that wireless mark-up language (WML) standards are used. A reference can be made to the postulation of Müller-Veerse (2001:41) who explains that this is good practice as STK is used by banks to cut costs on mobile banking. Thus there is alignment between the theory and practice in Absa Mobile Banking.

In view of the issue regarding the use of existing standards and solutions, the interviews with the network operators and mobile phone manufacturers highlighted the fact that these role-players have to apply to the rules set by the Independent Communications Authority of South Africa (ICASA) and this was used as a justification to explain that they are using existing technological standards to deliver a mobile network and mobile handsets to consumers. This practice also resonates with the theory of Lindgren *et al*. (2002:51) who highlight that there are certain technological requirements and standards that need to be met with the growth of mobile devices and the wireless communication industry. Furthermore, this practice in Absa Mobile Banking correlates with an article written by BitFlash (Anon., 2001i:4), who states that wireless

technology should be integrated that meets basic standards and best fits the need of the customer. It also correlates with the statement of Jonathan Craig, the marketing vice-president of Charles Schwab, who emphasises that, “People are not going to go out and buy a new mobile phone, just to use your service.” (Anon., 2000f.)

In conclusion, it can be deduced that Absa Mobile Banking utilises technology and a mobile business application that is based on existing standards and solutions. This allows for the delivery and use of a system that is already employed by most handsets and network operators in the market. The findings in Absa reverberate within the theoretical statement of Shi (2004:18) as Absa takes technical issues such as standardisation and the integration of different wireless technologies into consideration. Furthermore, the Mobey Forum White Paper (Anon., 2004p) stipulates that technological solutions have to enable independence between banks, operators and mobile phones. The section that follows will deal with this issue and how it enhances the implementation of Absa Mobile Banking as a value-added m-business offering.

7.4.3 Technological solutions have to enable independence between banks, operators and mobile phones

The Mobey Forum White Paper (2004) addresses the issue of technological solutions and how it has to enable independence between the various parties involved. As stipulated in the Mobey Forum White Paper (Anon., 2004p), the banking relationship, the operator relationship and the type of handset should be independent of each other. From the interviews conducted with all Absa staff, it became evident that Absa utilises technology that enables the independence of various parties involved in Absa Mobile Banking. As explained by Jacobs (2005) from Absa as well as Humphries (2005) from Motorola, network operators function as independent entities from Absa, as these entities only function as the delivery channel between the bank and the Absa Mobile Banking user. Similarly, the mobile phone manufacturer remains completely independent as it is not dependent on the network operator or the bank. In addition, as explained by Van Rensburg (2005), Absa Mobile Banking functions as an independent service but is to a certain extent dependent on network operators as the quality of the service rendered depends to a very large extent on the service provided by the network operator. In view of this, the practice in Absa Mobile Banking does not correspond to the postulation of Stolz (2001:1) who explains that mobile solutions should be compatible with every phone and every network operator. Consequently, the mobile solution should create a win-win situation for all the market participants.

In conclusion, the impact of rendering a mobile solution that uses technological solutions that enable independence between the various role-players ensures that effective service delivery is the responsibility of the bank and should not be affected negatively by network operators or mobile phone manufacturers. The findings pertaining to Absa Mobile Banking are in support of the theoretical statement supplied by Shi (2004:18) who highlights the relevance of addressing issues such as the usability and standardisation of different wireless technologies, which will in turn help mobile business to grow. The independent relationship already established between Absa, network operators and mobile phone manufacturers should be further developed, which will contribute to effective service rendering by the bank.

7.4.4 End-to-end, secure authentication and non-repudiation have to be guaranteed

As prescribed by the Mobey Forum White Paper (Anon., 2004p), transactional level security is essential in mobile financial services and solutions, and the information transferred between mobile terminals and merchants' and banks' systems has to be encrypted. Both the consumer and the merchant have to be authenticated and the proposed architecture must include bank and merchant protection against the customer disputing mobile transactions. From the Mobey Forum White Paper (Anon., 2004p) it can be deduced that there are three vital elements that need to be guaranteed in order to ensure secure mobile banking. These three elements include end-to-end security, secure authentication and non-repudiation. A discussion on all three elements follows:

- End-to-end security (message integrity and confidentiality)

  As defined by Lewis and Bridger (2001:5), end-to-end security means that the entire transmission of a message is secured, which has become a very important factor in the New Economy as the New Consumer experiences a scarcity of trust. Furthermore, securing any mobile commerce transactions may be even more difficult than protecting wired transactions (Anon., 2002i), which may be due to the various issues that come into play when conducting a mobile transaction, e.g. constrained bandwidth, memory limitations, battery life and many network configurations. When using SMS in the transmission of messages, it is important to ensure that the messages transmitted between two service providers are not violated in transit and, in this instance, end-to-end security becomes increasingly important (Anon., 2002i). Furthermore, regarding this matter, the Mobey Forum White Paper (Anon., 2004) explains that end-to-end security consists of message integrity and confidentiality. The concepts of message integrity and confidentiality are addressed by Mayo (2002:40) and labelled as key security requirements in mobile financial services. These concepts are defined as follows:

1. Privacy (confidentiality) – The contents of a transaction should be protected against unauthorised access and it should be possible to spot any alterations.
2. Integrity – It should not be possible for a third party to compromise the integrity of a given connection or transaction.

As explained by a significant majority of the respondents from Absa, end-to-end security is one of the key priorities of the bank, which is ensured by functioning with a WIG server that is an encryption mechanism. As stated by Vrey (2005), WIG is a secure encrypted data message transporting structure in the mobile operator environment. This is supported by the documentation study (Anon., 2005d) that adds that WIG is an application that is stored on a 32K SIM card and provides the user with additional menu options. Furthermore, it works similarly to being connected to the Internet with the exception that information is transmitted via SMS. As stated by Pieters (2005) from Absa, the solution is also PIN number and account number based, which is easy to use. This practice resonates with the theory of Lam *et al*. (2003:2054) who highlight that lightweight security mechanisms are needed to protect m-commerce transactions. This is due to resource constraints of mobile computing platforms. Furthermore, another advantage of Absa Mobile Banking is that it functions with a zero-PIN knowledge model, which means that not even Absa can view the customer's PIN on the system due to the hash creator used by the bank that scrambles the PIN. This can be referred back to the postulation of McGovern (1999:336), who emphasises the importance of trust in a relationship with the New Consumer. The implication of this is that the customer needs to request a new PIN number from the bank in the event that a PIN number has been lost, which proves that the customers can trust Absa with all their personal information. Furthermore, another contributing factor to the success of Absa Mobile Banking's end-to-end security system is the use of a system called a *triple des encrypted* system. This is a plug in that it is responsible for encrypting the PIN on the phone so that not even the phone knows what the PIN number is and the encryption is actually done before the PIN is given to the phone. This system also allows the PIN to be encrypted and decrypted at various points in the process to allow for a secure transaction to be processed. In support of the security model used in Absa Mobile Banking, Walter (2005) from Cell C and Vermooten (2005) from MTN explained that end-to-end security is also very important to the network operators, and these organisations also use the *triple des encrypted* system to ensure a high security model.

- Another element that is linked to the security of m-banking is secure authentication and, as indicated by the theory of Mayo (2002:40), authenticity is a key security requirement of mobile services. Authentication in the mobile financial services environment refers to the

fact that the individual should have some confidence that the origin of a given transaction, through the provision of a guarantee, is authentic. As stated by the Mobey Forum White Paper (Anon., 2004p), both the consumer and (in many instances) a merchant have to be authenticated.

Once again, a significant majority of the respondents from Absa indicated that the bank realises the importance of authentication and ensures that it proceeds flawlessly. This is further emphasised by the documentation study (Vrey, 2005) that elaborates on the fact that authentication is a key focus area of Absa Mobile Banking as the limitations can create fear around the security factor in the customers. This issue is also addressed by Pieters (2005) from Absa who stated that Absa Mobile Banking utilises the same PIN methodology used by Internet banking. This respondent further explains that this system functions on the basis of SMS alerts, which means that a PIN number and once-off password system allows for transactions to be processed. The password is only used once and is sent back to the customer via SMS. Moreover, Van Wyk (2005) is of the opinion that Absa has built a secure environment that is built on a trust relationship with its clients. This resonates with the findings of a study conducted on mobile banking by Mattila (2003) who explains that the security and trustworthiness of the usage of the service is one of the most important factors when the consumer decides on a banking service delivery channel. Van Wyk (2005) adds that PIN number security is the responsibility of the client and it is emphasised in all marketing material where the bank warns customers not to hand out their PIN number to anyone and reiterates the importance of PIN secrecy.

Similarly, Cohen (2005) explained that authentication has been made simplistic with the Random Verification Number (RVN) system used by the bank which means that when the customers register for mobile banking at the branch, they are sent an RVN as soon as they want to process a transaction. This RVN changes with every single transaction conducted, but is the enabler of all transactions processed through the bank. This is reiterated by Clayton (2004) in the documentation study where it is stipulated that Absa requires the user to enter an account number, PIN number and password, but instead of asking for a standard password, the user must enter a different combination of letters from the password every time a log-in takes place. Absa Mobile Banking has never had a problem with authentication and as emphasised by Louw (2005) “authentication comes into play where there is internal collusion”. This is supported by the documentation study (Raschke & Kelly, 2002:3) on mobile financial services, which states that security is becoming increasingly important and it

is not only limited to the failure of IT systems due to an external attack, but it is also linked to the misuse of private and confidential information by internal employees. In the context of Absa, Vrey (2005) is of the opinion that, “For now the message around mobile banking is not security” as this is offered as a value-add to Internet banking and the security is based on the same security structure and architecture developed for the Internet.

- The last issue regarding security relates to non-repudiation and the fact that it has to be guaranteed when using mobile financial services. As explained by Mayo (2002:40), non-repudiation refers to the fact that the originator of a given transaction should not be able to deny that a transaction was made. Furthermore, this is highlighted by the IDC White Paper (2004:1), which explains that non-repudiation is one of the most important elements of security and entails that the financial business needs to assure the online customers that the digital documents that they receive are the same ones that were originally sent.

  The interviews conducted with all Absa staff indicated that non-repudiation is ensured in Absa Mobile Banking by means of the PIN number system that is used on the phone. From the interview with Jacobs (2005), the IT Solutions Architect at Absa, it became clear that non-repudiation is ensured by entering the PIN number on the phone. PIN number secrecy is very important due to the fact that this is the customers’ gateway to Absa Mobile Banking. According to Jacobs (2005), no cases could be recalled where the bank had lost money on the mobile banking side. However, events could be recalled where the bank had lost money on the Internet banking side.

  In comparison to the interviews with Absa employees, it became evident from the interviews conducted with Walter (2005) from Cell C and Vermooten (2005) from MTN that non-repudiation is not a concern of the network operators. As explained by Vermooten (2005) from MTN, “It (non-repudiation) is not an issue at the moment. As the network I am only the bearer...”. This respondent added that the transaction happens on the bank’s side and is not the responsibility of the network operator. The same opinion was supported by Walter (2005) from Cell C. In the various interviews with the mobile phone manufacturers it was also explained that non-repudiation is the role of other role-players in the value chain such as the network operator.

In conclusion, it can be noted that the effective security system developed and utilised by Absa Mobile Banking is a major benefit to this mobile financial solution and can affect the success of this application in the future. The discussion on the technical issues pertaining to the use of open

and non-proprietary technologies that should involve existing standards and solutions, the independence of technological solutions and end-to-end security is based on the theoretical statements provided by Shi (2004:18) who explains that, “In order for mobile business to continue to grow, technical issues such as device limitations, usability, standardisation and integration of different wireless technologies must be addressed.” The discussion of the findings pertaining to technical issues illustrates that Absa Mobile Banking identifies the relevance of technical issues such as usability, standardisation and the integration of different wireless technologies. The research question pertaining to how Absa’s Delivery Channel Services Department implements technical issues as a value-added business offering has also been addressed and it can be said that Absa’s Delivery Channel Services Department implements technical issues as a value-added m-business offering.

Based on the above discussions pertaining to the technical issues and the implementation thereof as an m-business offering, the following section presents a discussion on the research aim relating to the determination of how Absa implements implementation issues as a value-added m-business offering. Moreover, this will entail a discussion on two main issues, namely the implementation costs to the bank and the consumer as well as the time at which a mobile financial solution is taken to the market. The theoretical conclusions relating to implementation issues as a value-added m-business offering of Absa Mobile Banking form the foundation for the verification of the research findings associated with the specific research aim.

7.5 IMPLEMENTATION ISSUES

The final category stipulated by the Mobey Forum White Paper (Anon., 2004p) deals with the implementation issues of mobile financial services and the matters that should be taken into consideration when launching or delivering a solution of this nature. This category consists of two sections that should be considered as part of the category. Firstly, the implementation costs are relevant and this entails the implementation cost to the banks, merchants and consumers. Secondly, the time at which solution is taken to the market is very important as it will determine the success of the solution and the acceptance in the market to a very large extent.

The results pertaining to the implementation issues can be tabulated to ensure that a holistic view of the finding on this category takes place. It should be noted that this category was tested with all the respondents, including the network operators and mobile phone manufacturers. Table 7.5 is a summary of the results pertaining to the implementation issues:

Table 7.5: Summary of key findings pertaining to implementation issues

Section C: Technical issues				
Sub-section	**Absa**	**Network operators**	**Mobile phone manufacturers**	**Documentation study**
Implementation cost to banks, merchants and consumers should be very low.	• Cost to bank and consumer is considerably low. • Bank implementation cost entailed cost involved with infrastructure development and now the cost mostly entails marketing costs. • The cost to consumer is currently a very positive element.	• Network operators do not contribute to the implementation cost.	• Mobile phone manufacturers do not play a role in the implementation costs.	• Used existing infrastructure in the implementation of the mobile financial solution.
Time-to-market is of critical importance.	• Was launched at a time when the market was not receptive to this kind of technology	• Network operators are of the opinion that the market is not ready for mobile commerce.	• Mobile phone manufacturers are launching no new initiatives to drive m-commerce or	• Has been aggressive in taking mobile banking to the market but needs to rethink the solution as a

	used by this financial solution. • The market has developed and this solution needs - market education and - marketing.	• A paradigm shift is needed for change.	mobile banking in the market. • Feel that the market is not ready.	change first has to take place in the lifestyle of the individual.

7.5.1 Implementation costs to banks, merchants and consumers should be relatively low

According to the Mobey Forum White Paper (2004), the costs of implementing and delivering mobile financial service solutions should be relatively low. As indicated in the documentation study (Anon., 2004n), the cost of the service is linked to the partners and all the partners' costs should be taken into consideration. These different partners and costs that should be considered are as follows (Anon., 2004n):

- The bank – costs for a bank consist of setting up a security infrastructure, maintaining it, distributing security credentials to consumers and maintaining customer support. Many of these costs can be integrated into the costs undertaken to launch other electronic channels.
- The merchant – costs for the merchants include setting up a solution and running it. The necessary technology has to be put in place to ensure that payment product information can be read and payments can be processed.
- Consumer costs – costs undertaken by the consumer include the purchasing of a mobile device and other required equipment as well as other service-specific costs.

When considering the cost of Absa Mobile Banking, it is important to place emphasis on the cost incurred by the bank and the consumer. The merchant does not play a role in the financial solution offered by Absa, hence, the infrastructure used by a merchant will not be discussed. However, in the context of Absa Mobile Banking, the respondents from Absa proclaimed various opinions around the implementation cost of Absa Mobile Banking. A significant majority of the

respondents from Absa, such as Van Rensburg (2005), Vrey (2005), Van Oppel (2005), Kazi (2005), Bouwer (2005), Jacobs (2005) and Van Wyk (2005) did not know what the bank's costs with regard to the implementation of Absa Mobile Banking entailed. Only respondents such as Louw (2005), Cohen (2005) and Pieters (2005) tried to elaborate and assess the implementation costs of Absa Mobile Banking. These responses were vague and no precise monetary value could be allocated to the setting-up costs of the financial solution. Louw (2005), Cohen (2005) and Pieters (2005) were all of the opinion that the implementation cost in 2000 varied between R1.2 million and R2 million. This entailed setting up the infrastructure for Absa Mobile Banking and, as indicated by Louw (2005), it would probably now cost the same as skills and technology are more readily available. Furthermore, Vrey (2005) explained that the implementation cost of Absa Mobile Banking is a fraction of the operational cost, which is in turn not necessarily current revenues. In the light of the aforementioned, it should also be noted that Van Rensburg (2005) mentioned that the cost-per-income ratio of Absa Mobile Banking is currently negative and "…it is an unprofitable solution at this point in time". With regard to the statement made by Van Rensburg (2005), it should be noted, as established, that Absa Mobile Banking has not been launched as a stand-alone banking service, but serves as a value-add for the Internet banking component. Furthermore, both Vrey (2005) and Van Rensburg (2005) emphasised that Absa Mobile Banking needs customer demand to make it a profitable solution. Vrey (2005) reiterates that Absa needs to get between 100 000 and 200 000 customers on the channel and transacting to make it financially viable. In support of this, Cohen (2005) reiterated that a few million rands are currently being spent on the marketing of Absa Mobile Banking. This is done to drive awareness. In many instances, this can still be viewed as implementation costs as the solution still needs to obtain awareness.

In addition to the cost of the bank, it is also relevant to take cognisance of the total cost of Absa Mobile Banking to the consumer. Respondents such as Vrey (2005), Van Oppel (2005), Kazi (2005) and Louw (2005) elaborated on the costs incurred by the consumer and explained it as follows:

1. There is no monthly fee involved in Absa Mobile Banking for the consumer. This service is freely available to all Absa clients.
2. When the interviews were conducted, Absa Mobile Banking cost the consumer between one and three rand per transaction, and the additional cost of the SMS needs to be added to this. From 1 April 2005, the monthly subscription fee was free of charge with a fee per transaction charged to the individual user. Balance enquiries and mini statements were charged at one

rand per enquiry and email statements at R1,60 per statement. Inter-account transfers were charged at three rand while fax statements cost the individual R3,50. Lastly, payments made by the individual costs the user R2,05 for the first R100 and only fifty-seven cents for every additional R100 or part thereof.

In addition, it is also relevant to note the business user's cost structures and how considerably different they were to those of individual users. On 1 April 2005, a monthly fee of R90 is charged to the business user. The business user is also charged a fee per transaction and payment to beneficiaries by the business users costs the user R4,62. A balance enquiry and mini-statement cost the business user R1,13 while inter-account transfers and payments cost R4,62. Email statements only cost R1,73 while a fax statement costs R3,63. Since then a promotion has been launched for individual and business users, from 1 October 2005 to 31 March 2006. All enquiries conducted via Absa Mobile Banking during this promotion are free of charge. This means that balance enquiries, mini-statements, fax statements and email statements, inter-account transfers and payments to beneficiaries are freely available to the consumer. Similarly, business users enjoy the same benefits as the latter variables are also free of charge to the business user and a fee per transaction is payable by the business user. One major advantage to both individual and business users is the fact that no data charge is included, meaning that SMSs are being sent free of charge. This promotion is known as the *Free Cellphone Banking* promotion and was launched in October by Absa in conjunction with Vodacom. This practice of offering value for money correlates with the statement of Gobé (2001:xii) who says that the economy that currently exists is a hypercompetitive marketplace. Absa has taken cognisance of this fact and is currently trying to win brand saliency by offering this promotion. Furthermore, Schmitt (1999:14) adds that customers want products to match their lifestyle or offer the allure of sharing in the lifestyle that the product presents. By taking the cost to the consumer into consideration, Absa is making it possible for many of the bank's users to share in the lifestyle of using mobile banking. As established, Absa is aiming at marketing Absa Mobile Banking as a lifestyle proposition, and the above discussion illustrates how this is being done.

In summation, the exact cost of Absa Mobile Banking to Absa could not be assessed but an in-depth breakdown of the costs involved to the consumer was discussed. From the interviews, it became apparent that the implementation costs are running costs to the bank and involve initiatives such as marketing and promotions. The findings correlate with the theoretical statement stipulated in the MeT White Paper on mobile transactions (Anon., 2003l:12), which states that ease-of-use directly affects the consumer adoption of the security solution whereas

costs associated with the solution form a critical component in the business case for the implementation. It has been shown that the cost related to Absa Mobile Banking forms an important component of the mobile solution and has been fully addressed by the bank. The following section deals with the time-to-market with regard to mobile financial solutions, and specifically Absa Mobile Banking.

7.5.2 Time-to-market is of critical importance

As stipulated in the Mobey Forum White Paper (Anon., 2004p), one of the most important factors of any mobile financial service solution is the time at which the solution is taken to the market. Furthermore, the availability of suitable handsets, security applications and infrastructures required for the particular service should be taken into consideration. Time-to-market has become a very relevant issue in the financial industry due to the fact that financial services are known to be early adopters of m-commerce (Anon., 2001i:1). The same author explains that this is due to the time and location sensitivity of mobile devices and networks as well as the value that it creates for the financial institutions' clients. This is reiterated by BitFlash Incorporated (Anon., 2001i:1) who state that financial institutions are notorious early adopters of new technology and the reason may be that these users understand the return on investment.

From interviews conducted with Kazi (2005) and Cohen (2005) from Absa, it became clear that Absa Mobile Banking was taken to the market in 2000 and was the first bank to launch mobile banking in the South African market. This is supported by the documentation study (Manson, 2005). which states the following:

The strategy adoption by Absa is both aggressive and cautious: aggressive in terms of being the first bank to launch a mass market mobile banking application in August 2000, but also conservative in that we sift through all the hype created in the market and the numerous solution alternatives on offer to determine concrete customer requirements. We then match needs with solid business principles and offerings.

In addition, Van Oppel (2005) is of the opinion that when taking this initiative to the market, the South African market was not mature enough for the use of this kind of technology and major uptake of the service did not take place in the Absa client base. This statement is supported by Louw (2005) who added that Absa Mobile Banking was not done at the right time as the respondent mentioned that when it was launched it was ground-breaking as there were technological limitations such as the required 32K SIM card when most mobile devices

functioned on 16K SIM cards but this has been overcome. The reasons for these statements vary from technological reasons to the slow growth in cellphone adoption rates. This resonates with the statement of Lam *et al*. (2003:2054) who say that regardless of the features of wireless devices, there are challenges to be addressed in order for handheld computing devices to be adopted as m-commerce platforms. Furthermore, a majority of the respondents interviewed from Absa were of the opinion that Absa Mobile Banking has not been marketed to the South African consumer at the right point in time. This issue is addressed by Ayadi (s.a.) who states that the key element for choosing the better moment of adoption (by banks) and the opportunity to invest in m-banking are to anticipate value proposition awaited by customers.

Despite the fact that Absa Mobile Banking already has marketing drives such as competition-based incentives, Pieters (2005) from Absa made it clear that more marketing can be done around Absa Mobile Banking in South Africa. As emphasised by Vrey (2005), mobile banking is "probably at a beginning stage of the opportune market" and one of the major obstacles for the growth of this phenomenon lies in the fact that staff currently use Internet banking, but mobile banking is not being used by Absa staff to the same extent. Vrey (2005) supports Pieters (2005) by stating that work needs to be done to sustain the work of getting customers onboard and the positive word-of-mouth by Absa staff on mobile banking would promote this initiative. In a similar light, Van Wyk (2005) stated, "I think we (Absa) could have marketed it a bit better." Similarly, network operators emphasise that the South African market is not ready for m-commerce. M-banking has not developed in South Africa as it has developed globally although an article written on mobile banking (Anon., 2004o) predicted it to develop in 2004. However, electronic banking in South Africa has shown a significant growth but this is proven to be more within online banking than mobile banking. Goldstuck (quoted by Clayton, 2004) reports that there are approximately 800 000 South Africans banking online. A change was brought about in 2005 when a number of banks in collaboration with network operators launched mobile banking in the South African market. In the light of this argument, Walter (2005) states that, "As for paying bills or purchasing shares via your cellphone, I don't think customers are ready for it." This respondent explains that a paradigm shift needs to take place for people to adopt mobile initiatives. This is supported by the documentation study on Absa (Manson, 2005) that explains that the technology itself will not fundamentally change banking. Manson (2005) continues by saying, "Rather, it is a tool that necessitates a rethink of current banking practice, access, structure and fees."

In addition, it was emphasised by Bouwer (2005) that Absa Mobile Banking is marketing a lifestyle and sells that lifestyle by marketing mobile banking. Similarly, Vermooten (2005) adds that m-commerce offers a lifestyle and it will only show an uptake when people adopt that lifestyle instead of just the mobile application. In comparison to the opinions discussed, Bouwer (2005), Cohen (2005) and Vermooten (2005) are of the opinion that it is now the right time for Absa Mobile Banking, as mobile banking has become very popular in the South African market with First National Bank, Standard Bank and MTN. Cohen (2005) added that mobile banking is in a growth phase, but education is needed as the market has become more receptive to this kind of technology and, as stated by Van Wyk (2005), Absa Mobile Banking needs to be "put into the client's (Absa) face".

Moreover, although the bank has made it clear that the South African market is still very immature, the network operators indicated that major initiatives are being launched to boost m-commerce in the country. Vermooten (2005) from MTN emphasised that this operator will be launching many new m-commerce initiatives in the following months and this is paired with a corporate social investment project that entails distributing mobile phones and SIM cards to underprivileged markets. Similarly, Cell C emphasised looking after the entrepreneur and aims to help business being managed better. Walter (2005) elaborated by explaining that the operator is launching fax and telephone services that are offered from branded containers placed in under-developed and rural areas. In comparison to the network operators, the mobile phone manufacturers reported that there were no major initiatives planned by these organisations to promote m-commerce in South Africa. Brands such as SAGEM and Motorola are of the opinion that the promotion of m-commerce is driven by corporate divisions of network operators and it is not an issue that they promote. However, it can be noted that Cress (2005) from Siemens explained that the organisation places emphasis on Intelligent Networks (IN) and developing technology to support a wider range of services for a wider market. This respondent added that Siemens is currently focusing strongly on charging and accounting technologies to be used for pre-paid mobile phones.

In conclusion, it can be noted that Absa offered mobile banking to a market that was not ready for a solution of this kind in 2000. This market has however developed in the use of mobile communication technology and has become receptive to the technologies that are used to render mobile banking as a service. There are currently many mobile banking initiatives being launched in the South African market and this has ripened the market to a very large extent. Taking cognisance of all the competitors in the market has made Absa aware that education and

marketing drives are needed to ensure that this solution is successful in its uptake by the customer. As highlighted in the theoretical statement stipulated in the MeT White Paper on mobile transactions (Anon., 2003l:12), ease-of-use directly affects the consumer adoption of the security solution whereas costs associated with the solution form a critical component in the business case for the implementation of m-banking. It can thus be said that the theoretical statement stipulated in the MeT White Paper on mobile transactions only correlates with the Absa Mobile Banking practice to a certain extent as the bank has addressed the security solution and the cost issue, but the bank has not chosen the optimum moment of adopting this solution in the market. The findings discussed illustrate that customers did not expect this kind of value proposition in 2000 as the adoption of the required technology needed for Absa Mobile Banking had not yet taken place. The deduction can thus be made that the timing of taking Absa Mobile Banking specifically to the South African market was incorrect. The bank should have conducted more in-depth research on the use of solutions, suitable handsets and infrastructure in the South African market.

7.6 CONCLUSION

The core principle of the research undertaken was to answer the question pertaining to how Absa's Delivery Channel Services Department implements m-banking as a value-added m-business offering. In order to answer this research problem, four corresponding research aims were conceptualised. These aims correlate with theoretical chapters and are reflected in the overall research problem. As such, the concepts that are relevant have been specified by the Mobey Forum White Paper (Anon., 2004p) as the four important categories that can be viewed as the industry requirements that should be taken into consideration when delivering mobile financial services. These four categories are customer proposition, business priorities, technical issues and implementation issues.

The first research aim is related to the determination of how Absa's Delivery Channel Services Department implements customer proposition as a value-added m-business offering and is discussed by addressing the identified issues of the Mobey Forum White Paper (Anon., 2004p). The issues pertaining to the customer proposition category include convenience of the user experience; the freedom of the consumer to choose operator and handset and change them independently; the acceptability and usability of the mobile financial service; building, improving and expanding the customer habit, and technical and perceived security levels. As such, the interviews and documentation study conducted on Absa Mobile Banking show that the

basic customer value proposition is based on convenience referring to the example that this individual can utilise Absa Mobile Banking as a ubiquitous entity conducting mobile banking irrelevant of the time or the person's location. Absa offers full banking functionality via Absa Mobile Banking, but the mobile financial solution is currently not used to the same extent as Absa Internet Banking. This solution does however offer multiple payment products to consumers using the mobile financial solution. Furthermore, clients using Absa Mobile Banking have access to an easy-to-use mobile solution as the architecture of the system allows the user to interact with a simplistic menu-driven application and the information requested and delivered is done so by means of SMS, which is a cheaper and well-known easy-to-use tool.

Moreover, the easy-to-use structure and architecture of Absa Mobile Banking contributes to the fact that the mobile banking solution is being perceived as a financial services solution that offers value for money. The mobile solution can also be seen as a value-adding extension of the Internet banking component. This is also marketed as part of the lifestyle proposition that is communicated to the user as Absa is trying to move away from selling mobile banking as a functional proposition and is driving this initiative by means of education and incentive-based initiatives, which explains the convenience and time-saving factor that Absa Mobile Banking has to offer the consumer. Absa acknowledges the relevance of customer habit and focuses on improving this as time goes by. Therefore, technical and perceived security are crucial in Absa Mobile Banking and the architecture utilises existing and well-known standards and solutions in the wireless industry. In addition to the security aspect, the research indicates that Absa functions with Vodacom and MTN as network operators, but has not yet made Cell C available as a value-added offering to Cell C subscribers. Adding to this, the customer conducting Absa Mobile Banking can use any handset, provided that is complies with the relevant standards such as being STK compliant and having WIG-enabled capabilities.

The identified theoretical statement pertaining to the first research aim by Anon. (2001l) stipulates that to drive sustainable value from mobile financial services, there are three important factors to consider: customer, customer and customer. When referring back to the interviews conducted in Absa, employees such as Van Rensburg (2005), Cohen (2005), Vrey (2005), Bouwer (2005), van Oppel (2005) and Kazi (2005) indicated an agreement between the above theoretical statement and the research finding due to the fact that Absa Mobile Banking delivers a customer proposition that is based on convenience, taking into consideration all the issues that influence the quality of value delivered to the consumer. The bank also places emphasis on offering a service that is usable and acceptable in the market and with other service providers,

and tries to create consumer habit by offering this service supported by many marketing initiatives. Furthermore, value is a key element that features in all the offerings of Absa Mobile Banking. It can thus be deduced that Absa's Delivery Channel Services Department implements customer proposition as a value-added m-business offering and succeeds in four of the five issues identified by the Mobey Forum White Paper (Anon., 2004p) under customer proposition. The only issue that Absa Mobile Banking has not completely succeeded in is offering the user the freedom to choose any network operator.

As such, from the findings obtained regarding the first research aim, it is pertinent to include the recommendation for Absa to investigate the offering of Absa Mobile Banking utilising Cell C as a network operator. Absa Mobile Banking is currently not available to Cell C subscribers or pre-paid users. During the interviews with Vrey (2005), Van Oppel (2005) and Louw (2005), it was said that the opportunity is being investigated but it should be considered that users are currently being locked-in by other banks and network operators and many Cell C users might change network operators to enjoy the benefits that other operators offer such as Absa Mobile Banking. In conclusion, the discussion pertaining to customer proposition indicates that there is an alignment with the discussed theory due to the fact that the documented theoretical statement pertaining to this research aim has been proven positive in the context of Absa Mobile Banking.

The second research aim relates to how Absa's Delivery Channel Services Department implements business priorities as a value-added m-business offering and, as stipulated by the Mobey Forum White Paper (Anon., 2004p), this category includes issues such as the authentication of customers while providing banking and payment services, service proposition need to be developed that has to offer value to all the parties concerned, business processes of different players need to remain independent of each other, solutions have to scale across all financial opportunities and, lastly, branding needs to be available in the mobile environment. Findings pertaining to Absa Mobile Banking show that Absa has integrated a multi-level identification system that functions with standard technology such as a WIG server. The bank has also ensured that the authentication process is effective as it utilises systems such as the RVN, and PIN number and password system to ensure that transactions and individuals and their Absa accounts are safe. Within the business priorities category, it is important to note that the bank has developed a solution that scales across many services and can be utilised for any of the transactions conducted by the individual. Moreover, this mobile solution has been developed to offer involved parties value and, more importantly, these parties remain independent in the delivery of the Absa Mobile Banking solution. Furthermore, visible branding in Absa Mobile

Banking is non-existent. Many reasons are given for this shortcoming including the fact that space is limited on an SMS, it is not fit-for-purpose and the relevance thereof on the device during a mobile banking transaction is questioned.

In this regard, the theoretical statement by Glick (2006) pertaining to the second research aim indicates that consumers and business priorities are coming together in mobile technology, which has led to access to information and communication any time and anywhere becoming a selling point and a necessity for companies. Within this theoretical statement it is stipulated that mobile technology can be utilised to serve both individuals and businesses as it allows access to information and communication irrelevant of the location of the individual or the time zone in which this person is functioning. This is evident in Absa's context, as the interviews with Vrey (2005), Cohen (2005) and Van Rensburg (2005) indicated an agreement between the aforementioned theoretical statement and Absa Mobile Banking. As explained by these respondents, a secure authentication process is in place for customers while the bank provides banking and payment services to the individual, irrespective of location or time. Furthermore, to enhance the value delivered to Absa Mobile Banking users, partnerships have been created with various role-players in the market. Moreover, the bank offers a value proposition to the parties concerned, such as network operators gaining revenue and handset manufacturers distributing handsets. It can be noted that these various role-players remain independent in the business process and no sole-dependency relationships are formed within the mobile banking business model. The bank's services can be utilised accessing any account of the individual, meaning that the solution developed by the bank sales across the portfolio of the individual. The discussion pertaining to business priorities indicates that Absa Mobile Banking implements four of the five issues identified in this category by the Mobey Forum White Paper (Anon., 2004p), but does not pay attention to branding being done on this mobile solution. In the light of this, there is an alignment with the theoretical statement, which means that the research aim has been achieved and proves that Absa's Delivery Channel Services Department implements business priorities as a value-added m-business offering. As such, from the findings obtained from the second research aim, it is pertinent to include the recommendation for Absa to implement visible branding on the Absa Mobile Banking application, as this would be of value to both the bank and the consumer. Visible branding could contribute to increased brand saliency within consumers. The market is currently cluttered with all the marketing material of the various newly launched mobile banking initiatives and Absa Mobile Banking should focus on creating brand saliency at every point of contact that the brand has with the customer.

The third research aim addressed how Absa's Delivery Channel Services Department implements technical issues as a value-added m-business offering. This category includes issues such as the use of open and non-proprietary technologies, the use of existing standards and solutions that should be used where possible, the use of technological solutions that should enable independence between banks, operators and mobile phones, and the creation of end-to-end security, secure authentication and the guarantee of non-repudiation. Interviews with the various Absa staff members as well as network operators and mobile phone manufacturers showed that Absa utilises open and non-proprietary technologies when delivering Absa Mobile Banking as a financial solution, but it can be noted that the use of these existing standards and solutions is accompanied by innovation and the creative manipulation of security technologies to ensure that successful secure Absa Mobile Banking transactions can take place. Furthermore, the findings gathered from the interviews conducted with Pieters (2005) and Van Wyk (2005) showed that end-to-end security has been ensured by means of the security architecture used by Absa and this is done with the use of a WIG server together with PIN number and password-based access and a *triple des encrypted* security system that allows end-to-end security. It was also made clear by Vrey (2005) that mobile banking security is based on Internet banking security protocols and mobile banking security has never created any problems; hence, mobile security is not the focal point of the bank. In comparison to the aforementioned, non-repudiation gains much attention and the communication of PIN number secrecy is a focus area communicated by all marketing material.

In this regard, the theoretical statements by Shi (2004:18) stipulate that in order for mobile business to continue to grow, technical issues such as device limitations, usability, standardisation and the integration of different wireless technologies must be addressed. This sentiment is supported by Müller-Veerse (2002:40) who emphasises that m-commerce is developing within the customer and business context, and it is imperative that these applications within these contexts are well-defined and understood. The findings gathered on Absa Mobile Banking indicate that the bank has addressed all the issues pertaining to technical issues as all four of the issues stipulated as part of this industry requirement are a main concern of Absa. It can be deduced that Absa implements technical issues as a value-added m-business offering and this is done by delivering a mobile banking application using existing technologies that utilise security systems that ensure end-to-end security, authentication and non-repudiation.

The fourth research aim pertains to how Absa's Delivery Channel Services Department implements implementation issues as a value-added m-business offering. This category includes

issues such as implementation costs and the relevance of the time at which the mobile application is taken to the market. The various interviews conducted in Absa could not ascertain the exact cost of setting up the Absa Mobile Banking application. It can however be noted that implementation costs currently include marketing costs as this is used as a major focus of the bank to ensure growth of the application in the country. The findings from interviews with Van Oppel (2005), Louw (2005), Vrey (2005), Pieters (2005), Van Wyk (2005) and Cohen (2005) indicated that Absa Mobile Banking was taken to the market in 2000 and not marketed effectively. However, it was noted that the market is now at an opportune stage, and various education and marketing drives are currently being used to develop Absa Mobile Banking.

In this regard, the theoretical statements by Anon. (2003l:12) pertaining to the fourth research aim indicate that ease-of-use directly affects the consumer adoption of the security solution, whereas the costs associated with the solution form a critical component in the business case for the implementation of mobile banking. This is evident in the context of Absa, as the research findings from Van Rensburg (2005) show that Absa Mobile Banking is an unprofitable solution at this point and, as stated by Louw (2005), “it has not been done at the right time”. Moreover, the investigation into the implementation of implementation issues as a value-added m-business offering in Absa Mobile Banking proves to be negative. The bank has spent a considerable amount of money on the Absa Mobile Banking application, but took this mobile financial solution to the market when it was rather unknown to the market. Furthermore, the bank did not invest in the necessary marketing drives at that time. However, taking the growth of m-banking into consideration, Absa does currently stand out as a strong competitor in the market when comparing all the other mobile financial solutions currently available.

This study on Absa Mobile Banking indicates that this mobile financial solution is being offered as a value-added m-business offering by Absa’s Delivery Channel Services Department and is positioned as part of a value-added service proposition of Absa Internet banking. Absa Mobile Banking offers the New Consumer, functioning in the New Economy, an opportunity to function as a ubiquitous entity and conduct mobile transactions at any time, anywhere and at any place, and this individual can now transfer funds from any account within this person’s portfolio. Furthermore, transactions are ensured to be safe due to the various processes involved with the architecture of this mobile solution. Taking all the research findings into account, it can subsequently be deduced that the research problem has been investigated, and it has been determined that Absa’s Delivery Channel Services Department implements m-banking as a value-added m-business offering. This is done by implementing the requirements of m-banking

stipulated in the Mobey Forum White Paper (Anon., 2004p). However, it should be noted that only three of the mobile banking requirements set out in the Mobey Forum White Paper (Anon., 2004p), meaning customer proposition, business priorities and technical issues, have been met successfully. The requirement dealing with implementation issues still need a considerable amount of work before it is seen as a value-added m-business offering of Absa Mobile Banking.

The following recommendations could be made for further research and theories regarding mobile banking or mobile financial solutions delivered as part of a value-added offering of a financial institution:

- A study could be conducted using the Mobey Forum White Paper (Anon., 2004p) as a measuring instrument and assessing by means of qualitative research techniques to what extent the consumer perceives Absa as meeting the requirements of the four categories stipulated in the White Paper. This study could be done on any one of the four major banks in South Africa.
- It is further recommended to conduct a study that develops a measuring instrument by which banks could continually assess their own progress with regard to complying with the Mobey Forum White Paper (Anon., 2004p) and meeting the requirements stipulated in the White Paper.
- Another recommendation for research is to conduct a comparative study of the four major retail banks in South Africa and how these banks perform against each other in the attainment of the requirements for successful mobile financial services, as stipulated in the Mobey Forum White Paper (Anon., 2004p). This study should also highlight the strengths and weaknesses that the various banks have and how they influence how the bank performs in meeting the various requirements set out in the Mobey Forum White Paper (2004).
- It is recommended that an exploratory study be conducted to explore what banks have to do in the future to render a service to the connected consumer. As mentioned by Cress (2005) from Siemens, under eighteen-year-olds are currently known as connected consumers whereas over eighteen-year-olds are categorised as networked consumers. The relevance of being *always on* and available for communication purposes has become a very important element with under eighteen-year-olds or connected consumers in the New Economy. A study could be conducted to ascertain what changes need to take place in the banking environment to ensure that the connected consumer is offered a mobile banking solution that is easy to use, convenient and offers value for money.

- A further recommendation for research is to examine two of the problematic issues regarding Absa Mobile Banking. This relates specifically to branding in the mobile environment and the assessment of the correct timing of taking a mobile financial solution to a specific market. These studies could consist of case studies investigating best practice research with regard to branding in the m-banking environment. It could also contain case studies of different m-banking solutions and the launch thereof in specific countries, taking into consideration all the influencing factors such as the kind of technology used, the technology adoption rates and how the solution contributes as value-add to the various financial institutions.